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CLAIMS

[Claim(s)]

[Claim 1]A picture display part which has a viewing area which can display a picture, and an image control part which controls a display of said picture, A game machine with which a motion of said two or more movable bodies will be interlocked with, and said image control part will display a picture on said viewing area if it has a motion-control part which controls a motion of two or more movable bodies in which a motion which enters in said viewing area at least is possible, and said two or more movable bodies and said motion-control part moves said two or more movable bodies.

[Claim 2]A picture display part which has a viewing area which can display a picture, and an image control part which controls a display of said picture, So that it may have a motion-control part which controls a motion of two or more movable bodies in which a motion which enters in said viewing area at least is possible, and said two or more movable bodies and change of said picture and a motion of said two or more movable bodies may interlock, A game machine to which said image control part changes said picture, and said motion-control part moves said two or more movable bodies.

[Claim 3]A game machine to which an image control part changes said picture, and/or a motion-control part moves said two or more movable bodies so that it may be visible in one side having done an operation to another side among a picture and said two or more movable bodies, when two or more movable bodies enter in a viewing area in a game machine indicated to Claim 1 or 2.

[Claim 4]An image control part which controls a display of a pattern in a game machine indicated in any 1 clause of 3 from Claim 1, A game machine to which said image control part changes a pattern, and said motion-control part moves two or more movable bodies so that it may have a game control part which gives a game person a privilege when a specified pattern is displayed on a picture display part as a result, and change of a pattern and a motion of two or more movable bodies may interlock.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the game machine provided with a picture display part and two or more movable bodies.

[0002]

[Description of the Prior Art]In an image display unit, it is begun to fluctuate a pattern group in the pachinko machine which is one of the game machines, in two or more variable regions, if a pachinko ball wins a prize of predetermined regions (for example, a gate, a start opening, etc.) or it passes, respectively. The upset condition of such a pattern group is called "pattern fluctuation." And a privilege will be given to a game person, if change of a pattern group is suspended and a specified pattern is displayed on an image display unit as a result, after beginning pattern fluctuation and carrying out for a while.

[0003]By the way, only from the production by change and a stop of a pattern group, since a display became monotonous, the technology which the movable body provided in the specified position, for example in JP,H8-249204,A or JP,H8-141161,A rotates according to a picture was indicated.

According to this technology, a motion of a movable body is also added to change of a picture, but a picture does not influence positively to a movable body conversely, without a movable body influencing positively to a picture. Therefore, the game person who got it used to seeing a few will get bored also with linkage of a picture and a movable body. Then, the applicant of this application indicated the technology in which a picture without the movable body which has substance in Tokuganhei11-200896 (unpublished), and substance performed production which interlocks within a viewing area. According to this technology, a picture changes according to a motion of a movable body, or a movable body moves to compensate for change of a picture. Therefore, it was able to carry out by not boring more the game person who looks at a movable body and a picture.

[0004]

[Problem to be solved by the invention]However, with the technology indicated to Tokuganhei11-200896, only one movable body was only established. Therefore, even if it performed production by linkage with a picture and a movable body, it is only a movable body of 1 that is moved as substance, and it lacked force. This invention is made in view of such a point, and it aims at making it not bore a game person further by performing production which interlocks a picture and two or more movable bodies within a viewing area, and is powerful.

[0005]

[The means for solving a technical problem 1] The means for solving a technical problem 1 is as having indicated to Claim 1. Here, about the term indicated to Claim 1, it interprets as follows. The same can be said for the claim of others [interpretation / concerned], and the detailed description of the invention.

(1) All the things which can be displayed on a picture display part are included in "picture" like a

special pattern and not only patterns usually, such as a pattern and an ornament pattern, but characters (an alphanumeric character, a Chinese character, etc.), a sign, a mark, a figure (a character etc. are included), and an image. Still Picture Sub-Division may be sufficient as a picture, and animations, such as animation, may be sufficient as it.

(2) Not only all of the fields which can be displayed by a picture display part but a part of field concerned is included in "viewing-area."

(3) "picture display part" is good also as a display for indication (display device) of 1, and may consist of two or more displays for indication. The "viewing area" at the time of constituting from two or more displays for indication consists of all or a part of viewing areas of each display for indication.

(not only operation that a movable body enters so that it may see from a transverse plane of a game machine and may lap on a viewing area as 4) "a motion which enters in a viewing area" but operation to which a movable body which has moved from the outside of a picture display part changes and enters into a picture which imitated the movable body concerned within a viewing area is included. "A motion which enters in a viewing area at least" is the meaning which includes arbitrarily not only a motion that enters in a viewing area but a motion within a viewing area, a motion which comes out out of a viewing area, etc.

(in moving 5) "two or more movable bodies", at least two movable bodies may be moved almost simultaneous, after moving a movable body of 1, other movable bodies may be moved, and it contains all the modes to which two or more movable bodies move as a result. Almost simultaneous, two or more movable bodies may be moved so that it may enter in a viewing area, and it may move so that it may enter in a viewing area for every movable body to different timing.

[0006]According to the means 1 concerned, if a motion-control part moves two or more movable bodies, a motion of two or more movable bodies concerned will be interlocked with, and an image control part will display a picture on a viewing area. A movable body of this time plurality moves within and without a viewing area, or comes out [entering in a viewing area ****, or] out of a viewing area. At this time, it seems that a motion of two or more movable bodies is interlocked with, and a picture changes from a game person etc. Game persons cannot know which movable body will move among two or more movable bodies. Therefore, it becomes the production where a picture changes according to a motion of two or more movable bodies and which is powerful, and a game person who looks at these is not bored further.

[0007]

[The means for solving a technical problem 2] The means for solving a technical problem 2 is as having indicated to Claim 2. The mode which begins change of a pattern group is also included from the mode which suspends change of not only the mode that changes the form of the form of a picture, color, a size, a display position, etc. to here, the term indicated to Claim 2 "changing a picture" but a pattern group, and a stopped picture. The same can be said for the claim of others [interpretation / concerned], and the detailed description of the invention.

[0008]According to the means 2 concerned, an image control part changes a picture and a motion-control part moves two or more movable bodies so that change of the picture in a viewing area and a motion of two or more movable bodies may interlock. That is, two or more movable bodies are moved to compensate for change of a picture, or a picture is changed according to a motion of two or more movable bodies. At this time, game persons cannot know which movable body will move among two or more movable bodies. Therefore, linkage with a picture and two or more movable bodies serves as production which changes to Oshi more and is powerful, and does not bore further the game person who looks at these.

[0009]

[The means for solving a technical problem 3] The means for solving a technical problem 3 is as having indicated to Claim 3. Here, "OPERATION" of the term indicated to Claim 3 is the operation which is accompanied [to strike (it strikes)] by motion like dropping [which is taken / which is

pulled / to push / up and down]. The same can be said for the claim of others [interpretation / concerned], and the detailed description of the invention.

[0010]According to the means 3 concerned, if two or more movable bodies enter in a viewing area, an image control part will change a picture or a motion-control part will move two or more movable bodies. It is made visible [change of the picture concerned or a motion of a movable body] in one side having done the operation to another side among a picture and two or more movable bodies. Signs that exert an operation on a picture without substance from two or more movable bodies which have impossible substance actually by such control, or an operation is exerted on two or more movable bodies which have substance from a picture without substance can be directed. Therefore, linkage with a picture and two or more movable bodies serves as production which changes to Oshi more and is powerful, and does not bore further the game person who looks at these.

[0011]

[The means for solving a technical problem 4] The means for solving a technical problem 4 is as having indicated to Claim 4. The mode which begins change of a pattern group is also included from the mode which suspends change of not only the mode that changes the form of the form of a pattern, color, a size, a display position, etc. to here, the term indicated to Claim 4 "changing a pattern" similarly saying "a picture is changed" but a pattern group, and a stopped pattern. The same can be said for the claim of others [interpretation / concerned], and the detailed description of the invention.

[0012]According to the means 4 concerned, an image control part changes a pattern and a motion-control part moves two or more movable bodies so that change of the pattern in a viewing area and a motion of two or more movable bodies may interlock. That is, a pattern changes according to a motion of two or more movable bodies, or two or more movable bodies move to compensate for change of a pattern. Therefore, since a motion of two or more movable bodies and change of a pattern interlock and move, it becomes powerful production, and the game person who looks at these is not bored further. Since a privilege is given as a specified pattern is displayed on a picture display part as a result, the game person can play a game, expecting a privilege.

[0013]

[Mode for carrying out the invention]Hereafter, an embodiment in this invention is described based on Drawings. This embodiment is the example which applied this invention to a pachinko machine provided with two or more movable bodies, and it is described, referring to drawing 1 - drawing 12.

[0014]A front view shows appearance of the pachinko machine 10 which is the 1st sort pachinko machine to drawing 1. On the game board surface 12 of the pachinko machine 10 shown in drawing 1, By the gate 32 which has the gate sensor 58 which detects a pachinko ball to pass, the passing mouths 26 and 62 which can pass a pachinko ball, the 1st type start opening 30 that has the start opening sensor 60 which detects a pachinko ball which won a prize, and the solenoid 54. The big prize port 34 which has the lid 74 opened and closed, the special pattern display for indication 24 mentioned later, the reserved ball lamp 20, the complex device 14 which has 22 grades complexly, other general prize ports, a windmill, a nail, etc. are arranged suitably. The manual operation button 48 (final controlling element) in which a game person operates it to the pachinko machine 10 in a lower part of the game board surface 12. The lower dish 44 which stores temporarily a pachinko ball containing awarded balls, It has the handle 40 provided with the ash pan 46 into which a cigarette end of tobacco, etc. are put, and the touch sensor 42 which detects whether a game person's hand is touching, the loudspeaker 50 which provides in an inside of the top plate 38 which is a saucer of awarded balls, and makes sounds (a sound effect, music, etc.), etc. It has the lamps 16 which consist of a photogen arranged at a suitable position according to the frame opening sensor 36 which detects opening of the glass frame 18 (it is also called a "metal flask" to others.), a game content of the pachinko machine 10, etc. Furthermore, the top plate 38 is equipped with returning switch 72 grade which orders it the ball rental switch 64 which orders it ball rental, and return of a prepaid card.

[0015]The passing mouth 26 arranged on the game board surface 12 is equipped with the common pattern display 28 which changes or stops and usually displays a pattern. Change starts and the pattern display 28 usually stops after specified time elapse, when it has a piece or two or more photogens (for example, LED which can emit light with plural colors, such as green, red, and orange) and a pachinko ball passes to the gate 32. It changes by specifically blinking a photogen, and if a specific photogen stops in the state of switching on the light in a specific color (or putting out lights), only fixed time (for example, for 4 seconds) will open a lid of the lower start opening 68. the V zone 56 where the big prize port 34 will become continuable within a necessary round number (for example, 16 rounds) about a big-hit-games state if a pachinko ball other than the above-mentioned lid 74 wins a prize within a big prize port opening period (for example, for 20 seconds) — awarded balls are only paid out — it usually has a prize port etc. In order to detect a pachinko ball which won a prize, in the V zone 56, it has V zone sensor 52, and has the prize sensor 70 in the above-mentioned common prize port, respectively. The lower start opening 68 provided with the start opening sensor 66 which detects a pachinko ball which won a prize under the big prize port 34 is established. The lower start opening 68 concerned is provided with a function equivalent to the 1st type start opening 30, and all as well as the usual prize port will pay out awarded balls, if a pachinko ball wins a prize.

[0016]The heavens prize port 76 equivalent to a prize port with the general complex device 14 expanded and shown in drawing 2 (A), A picture. The movable components 80, 82, and 84 in which the motion which is movable to the special pattern display for indication 24 and prescribed direction (for example, sliding direction) which can be displayed, and enters in the viewing area of the special pattern display for indication 24 is possible, and the number of a pachinko ball which usually passed through the gate 32 during change of a pattern. It has the reserved ball lamp 20 to display and reserved ball lamp which displays the number of pachinko ball (namely, reserved ball) which won a prize of 1st type start opening 30 or lower start opening 68 during change of special pattern 22 grade. Hereafter, the number of the reserved ball which can be recognized by the display of the reserved ball lamp 22 is called "the number of reserved balls." The special pattern display for indication 24 equivalent to a picture display part displays not only a special pattern but a character, a sign, a mark, a figure, an image, etc. using a liquid crystal display. If a pachinko ball wins a prize of the 1st type start opening 30 or the lower start opening 68, it is begun to change the special pattern displayed on the special pattern display for indication 24, and if it goes through predetermined time, it will stop. Not only the mode stopped thoroughly but the mode which displays the state of going back and forth and moving by a prescribed range to a prescribed direction is included in the stop concerned. For example, a pattern also includes the state of shaking to a sliding direction slightly in a stop. What kind of display for indication which can display a pattern may be used for the special pattern display for indication 24 like CRT, a LED display device, and a plasma display. Although the pattern display 28 and the special pattern display for indication 24 were usually used separately, both sides may be made to serve a double purpose with the same display for indication. As for the reserved ball lamps 20 and 22, each consists of one piece or two or more photogens (for example, four LED).

[0017]As shown in drawing 2 (B), the movable component 82 which imitated the star is constituted by the sliding direction (arrow D 2-way to illustrate) movable by the motor 86. The rotational movement which torque transmission members (not shown), such as a gear tooth, a belt, a chain, a rack & pinion, and a torque converter, were made to intervene, and was generated in the drive of the motor 86 is changed into an advance and retreat movement by a torque transmission member between the movable component 82 and the motor 86, and it transmits it to the movable component 82. In this way, the movable component 82 becomes movable to the sliding direction of Drawings. The advance and retreat movement of the movable components 80, 82, and 84 of each other can be independently carried out to a sliding direction by constituting this almost similarly about the movable components 80 and 84. Color the movable component 80 yellow, the movable component

82 is colored blue, and the movable component 84 is colored red, respectively. The cover body 88 is formed in the front-face side (the example of drawing 2 (B) left-hand side) of the special pattern display for indication 24 so that a game person etc. can touch neither the movable components 80, 82, and 84 nor the special pattern display for indication 24 directly.

[0018]Next, the main control substrate 100 (a motion-control part, a game control part) which realizes the pachinko game by the pachinko machine 10. It explains referring to drawing 3 in which these outline composition was shown for the display control board 200 (image control part) which displays a picture on the special pattern display for indication 24 in response to the display command sent from the main control substrate 100 concerned. These main control substrates 100 and display control boards 200 are provided in the back side of the pachinko machine 10. The main control substrate 100 shown in drawing 3 is constituted focusing on CPU(processor) 110, A game control program and necessary game data. (For example, a great success value) etc. ROM112, various kinds of random numbers, data, an input output signal, etc. to store. RAM114 to store and the signal sent from various kinds of input devices. The input processing circuit 102 which is received and is changed into the data format which can be processed within the main control substrate 100, the output processing circuit 104 which operates various kinds of output units in response to the operation data sent from CPU110, and the indicative data sent from CPU110. It has the display control circuit 106 which wins popularity and displays various kinds of photogens suitably (lighting and putting out lights are included), and communication control circuit which transmits necessary data to display control board 200 116 grade. Each of these components is mutually combined with the bus 118.

[0019]Although CPU110 executes a game control program stored in ROM112 and a game by the pachinko machine 10 is realized, a program for realizing the 1st type start opening processing etc. which are mentioned later is also included in the game control program concerned. Although DRAM is used for RAM114 ROM112 using EPROM, a memory of other kinds may be used. being concerned — others — there are EEPROM, SRAM, a flash memory, etc. as a memory of a kind. As an input device with which the input processing circuit 102 receives a signal, there are the start opening sensor 60, the gate sensor 58, a prize sensor (V zone sensor 52 grade), or other sensors (the touch sensor 42, frame opening sensor 36 grade), for example. As an output unit with which the output processing circuit 104 outputs a signal, there is solenoid 54 grade, for example. As a photogen which the display control circuit 106 displays, there is the lamps 16, the reserved ball lamps 20 and 22, or common pattern display 28 grade, for example. The communication control circuit 116 can transmit necessary data also to a frame control board, a hall computer, etc. which are not illustrated further if needed.

[0020]Next, the display control board 200 is constituted focusing on CPU210, RAM204 which stores ROM202 which stores a display control program and necessary indicative datas (for example, display information, two or more variation patterns, etc. corresponding to a display command), a display command, display information, an input output signal, etc., and data transmitted from the main control substrate 100. It has the VDP(Video Display Processor)214 grade which processes and displays a picture to the special pattern display for indication 24 in response to the communication control circuit 206 received and carried out, the character generator 212 which generates a necessary picture, and display information sent from CPU210. Each of these components is mutually combined with the bus 208.

[0021]Although CPU210 executes the display control program stored in ROM202 and a picture is displayed on the special pattern display for indication 24, the program for realizing picture display processing etc. which are mentioned later is also included in the display control program concerned. Although DRAM is used for RAM204 ROM202 using EPROM, the memory of other kinds may be used. being concerned — others — there are EEPROM, SRAM, a flash memory, etc. as a memory of a kind. The communication control circuit 206 can transmit necessary data also to a frame control board, a hall computer, etc. which are not illustrated further if needed. As a picture which the

character generator 212 generates, there are animations, such as a character, a pattern, and animation, Still Picture Sub-Division, an image, etc., for example. VDP214 which has VRAM, palette RAM, etc., The data of the character corresponding to display information, a pattern, a background, etc. is generated and read with the character generator 212, and after performing image editings, such as color scheme specification and sprite processing, and carrying out data expansion to VRAM or palette RAM, a video signal, a synchronized signal, etc. are eventually outputted to the special pattern display for indication 24. Processing which changes or stops and displays two or more pattern groups simultaneous or un-simultaneous with the sprite function realized by performing sprite processing at this time can be performed at high speed.

[0022]In the pachinko machine 10 constituted as mentioned above, in order to realize this invention, the procedure performed by the main control substrate 100 or the display control board 200 is explained with reference to drawing 4 - drawing 9. To drawing 4, here the contents of the 1st type start opening processing which realizes winning-a-prize distinction of a pachinko ball to the 1st type start opening 30, The contents of the pattern fluctuation processing which realizes the display which changes for it or stops a pattern group to the special pattern display for indication 24 to drawing 5. The contents of the fluctuation displaying processing which realizes a display since it begins to change a pattern group to drawing 6, until it stops to drawing 7. The contents of the reach processing which realizes change based on a reach display and a reach pattern, The contents of interlocking change processing in which linkage (a synchronization, alignment) with the picture displayed on a motion and the special pattern display for indication 24 of the movable components 80, 82, and 84 is realized to drawing 8. A flow chart shows the contents of the picture display processing as which the display control board 200 which received the display command sent from the main control substrate 100 in drawing 9 performs an image editing, and displays a picture on the special pattern display for indication 24, respectively. The 1st type start opening processing, pattern fluctuation processing, fluctuation displaying processing, reach processing, and interlocking change processing among these processes, CPU110 executes the game control program stored in ROM112 in the main control substrate 100 shown in drawing 3 to suitable timing (for example, cycle in every 4 milliseconds), and all are realized. In the display control board 200, to suitable timing, CPU210 and VDP214 execute a program and realize picture display processing.

[0023]Here, although "it adds" as used in the following explanation means that only 1 usually increases the number of reserved balls, the case where it increases two or more [every] suitably according to a game position etc. is included. On the other hand, it is the same as that of the case where it adds except for the point of reducing the number of the reserved balls "to subtract." Since the 1st type start opening 30 and the lower start opening 68 function similarly, in order to explain simply, they make the 1st type start opening 30 an example, and are explained. Three right-hand side variable regions are divided for change or the stop of a pattern group performed with the special pattern display for indication 24, a left-hand side and inside side changes a pattern group to it, respectively, and the mode which stops middle figures to the variable region by the side of inside, and stops right figures for left figures to a right-hand side variable region in a left-hand side variable region is applied to it.

[0024]In the 1st type start opening processing shown in drawing 4, it is distinguished whether the pachinko ball won first a prize of the 1st type start opening 30. [Step S10]. If a detecting signal is specifically received from the start opening sensor 60 in drawing 1 and drawing 3 — having won a prize (YES) — it distinguishes and distinguishes from (NO) which has not won a prize if the detecting signal concerned is not received. If a pachinko ball wins a prize of the 1st type start opening 30, it will be distinguished whether the number of reserved balls reached upper limit (for example, 4). [Step S12]. If the number of reserved balls has not reached upper limit, (NO) and its number of reserved balls are added. [Step S14]. LED of the reserved ball lamp 22 is turned on according to the added number of reserved balls. Then, various random numbers are read and memorized. [Step S16] The 1st type start opening processing is ended. When the pachinko ball has

not won a prize of the 1st type start opening 30 (NO of Step S10), or when the number of reserved balls reaches upper limit (YES of Step S12), the 1st type start opening processing is ended as it is. [0025] By various random numbers which are read at the above-mentioned step S16, and are memorized to RAM114. The random number RB for big hit patterns used since a big hit pattern (a specified pattern should put together) stopped and displayed on the special pattern display for indication 24 is specified when distinguished from great success by random number RA for a great success judging used for distinction of being great success, and random number RA for a great success judging. Random number RC for reach patterns used since a display pattern after reaching reach according to a reach pattern (a prescribed pattern should put together) etc. which were displayed on the special pattern display for indication 24 until it suspends change is specified. There are the random number RE for numbers of times operation etc. which are used in order to determine the number of times n of linkage of random number RD for probability variations used in order to distinguish whether probability which is becoming it a great success is changed after being becoming it a great success, the movable components 80 and 82, and 84 grades. "Reach" or a "reach condition" means the state where other special patterns are in agreement with a reach pattern, except for the remaining special patterns still changed.

[0026] In pattern fluctuation processing shown in drawing 5, it is distinguished first whether the number of reserved balls is a positive number (that is, number of reserved balls >0 is filled). [Step S20] a time of the number of reserved balls being 0 or a negative number — (NO) — pattern fluctuation processing is ended as it is. On the other hand, when the number of reserved balls is a positive number, the number of reserved balls is subtracted in preparation for the processing on and after (YES) and next time. [Step S22] LED of the reserved ball lamp 22 is turned on according to the subtracted number of reserved balls. And it is reading about random number RA for a great success judging memorized at Step S16 of drawing 4. [Step S24] Fluctuation displaying processing is performed. [Step S28] The concrete contents of fluctuation displaying processing are explained referring to drawing 6.

[0027] In the fluctuation displaying processing shown in drawing 6, it is distinguished first whether it is "great success." [Step S40] It distinguishes by whether random number RA for a great success judging read at Step S24 of drawing 5 is specifically in agreement with a great success value. although one or more great success values come out, if a game position (for example, probability variation) etc. change, the number of a great success value may be changed. It is reading about the random number RB for big hit patterns memorized at Step S16 of (YES) and drawing 4 when distinguished from "great success." [Step S42] The pattern (it calls the following "stop schedule pattern".) which is due to stop eventually and to be decided based on the value of the random number RB for big hit patterns concerned is determined, and it progresses to Step S44 mentioned later that it should be begun to fluctuate a pattern group. When distinguished from a "blank" at Step S40, in order to display (NO) and a blank pattern on the special pattern display for indication 24 on the other hand, after shifting and reading pattern data from RAM114 [Step S52] It is distinguished whether a reach pattern is included in the blank pattern concerned. [Step S54] The combination of left figures and right figures corresponds and a reach pattern is the same pattern (what is called a Zorro eye) in the usual pachinko machine 10. Supposing it includes a reach pattern (YES), it will progress to Step S44 later mentioned since reach is reached on the way, although it becomes a "blank" eventually. If a reach pattern is not included, it is begun like (NO) and Step S44 on the other hand, to change a pattern group. [Step S56] After changing based on a predetermined variation pattern, it shifts and stops in a pattern. [Step S58] It progresses to Step S48 mentioned later. In the above-mentioned step S56 and S58, a display command corresponding, respectively is sent to the display control board 200, and it realizes.

[0028] After sending a display command to the display control board 200 and beginning to change a pattern group [Step S44] Reach processing is performed. [Step S46] It supposes that the processing performed by the display control board 200 is mentioned later, and it explains, referring

to drawing 7 for the concrete contents of reach processing first. The reach processing shown in drawing 7 reports a reach advance notice to a game person etc. first. [Step S60] .Immediately after making the movable components 80, 82, and 84 enter into the viewing area of the special pattern display for indication 24, specifically, it returns to an original position (reference position). At this time, it seems for the movable components 80, 82, and 84 to get down, and to withdraw immediately to a game person. And it is reading about random number RC for reach patterns memorized at Step S16 of drawing 4. [Step S62] A reach pattern is determined. [Step S64] .It opts for the determination of a reach pattern according to the 1st data table etc. that were memorized by the ROM112 grade based on the stop schedule pattern determined, for example at Step S42 (or step S52) of drawing 6, and random number RC for reach patterns read at Step S62 of drawing 7. The 1st data table concerned specifies the relation between a stop schedule pattern (or gap of the pattern between a reach pattern and middle figures), and random number RC for reach patterns.

[0029]In this way, after determining a reach pattern, a display command is sent to the display control board 200, and a reach pattern (the Fig. 1 handle, the Fig. 2 handle) is displayed on the special pattern display for indication 24 at the special pattern display for indication 24. [Step S66] .The Fig. 1 handle is left figures and the Fig. 2 handle is right figures. A reach pattern may be displayed only on the special pattern display for indication 24 and other displays for indication, and may be displayed on the both sides. Since a reach pattern etc. will be displayed also on displays for indication other than special pattern display-for-indication 24 if it carries out like this, it becomes easy to recognize what a reach pattern is. When displaying a reach pattern, it may report having reached reach further to a game person. As the information concerned, a character, predetermined animation, etc. of "reach" are displayed, for example, a sound and a specific sound effect are taken out from the loudspeaker 50, and there is a mode of vibrating a chair in which the handle 40 which a game person touches, and a game person sit down. If it carries out like this, the game person can recognize having reached reach more certainly.

[0030]Then, a reach pattern determined at Step S64 divides processing by whether it is a specific reach pattern. [Step S68] .It is a deed about change with a reach pattern which sent a display command to (NO) and the display control board 200, and was determined as them at Step S64 when it was not a specific reach pattern. [Step S74] Pattern fluctuation is suspended and a final drawing handle (Fig. 3 handle) is displayed. [Step S72] .The Fig. 3 handle is middle figures and a special pattern (left figures, middle figures, right figures) in this lottery decides it. On the other hand, when it is a specific reach pattern in Step S68, (YES) and interlocking change processing are performed. [Step S78] .It explains referring to drawing 8 for the concrete contents of the interlocking change processing concerned.

[0031]Read the random number RE for numbers of times operation first memorized at Step S16 of drawing 4 in the interlocking change processing shown in drawing 8. [Step S80] According to the 2nd data table etc. that were memorized by the ROM112 grade based on the random number RE for numbers of times operation concerned, the number of times n of linkage is determined. [Step S82] .The 2nd data table specifies the relation between the random number RE for numbers of times operation, and the number of times n of linkage. If a fixed relation is given to the expectation degree (reliability) with which the ease of becoming is expressed to the number of times n of linkage, and great success (for example, an expectation degree will also become high if the number of times n of linkage increases), the game person can guess an expectation degree with the length of the period when linkage is performed. Then, while moving the movable components 80, 82, and 84 and making it enter in the viewing area of the special pattern display for indication 24 as preparation for performing linkage with a picture and two or more movable bodies, the character 96 (references, such as drawing 11) is made to appear in the special pattern display for indication 24. [Step S84] .The number of a movable component made to enter in the viewing area concerned is arbitrary.

[0032]And until the number of times n of linkage determined at Step S82 is set to 0, [Step S90]

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[0036]Next, it explains, referring to drawing 9 for the picture display processing performed by the display control board 200. Here, the display command sent from the main control substrate 100 is assumed to be what is memorized by the receive buffer provided in the RAM204 grade shown in drawing 3 with the separate processing program executed by reception interruption etc. timely. It is reading about the display command which CPU210 memorized to the receive buffer first in the picture display processing shown in drawing 9. [Step S100] An indicative data is acquired based on the read display command, and it memorizes to RAM204. [Step S102] .An indicative data is acquired with reference to the data table which specified the relation between a display command and an indicative data, and was more specifically memorized in the ROM202 grade. This indicative data is a data element (parameter) for performing an image editing, for example, has a status number, a left-figures number, left position coordinates, a middle-figures number, an inside position coordinate, a right-figures number, the right position coordinate, an animation number, a status flag, an animation timer, etc. In this way, 210 which acquired the acquired indicative data transmits the indicative data concerned to VDP214.

[0037]VDP214 which received an indicative data from CPU210 extracts data of a character, a pattern, a background, etc. from the character generator 212 based on the indicative data concerned. [Step S104] After performing image editings, such as color scheme specification and sprite processing [Step S106] Data is developed on VRAM or palette RAM. [Step S108] .And developed data is changed into a picture signal and it outputs to the special pattern display for indication 24. [Step S110] .In this way, a pattern etc. which were edited based on an indicative data can be displayed on the special pattern display for indication 24. Since it carries out by VDP214 by making an image editing into hardware, a picture can be displayed at high speed.

[0038]Next, each processing shown in above-mentioned drawing 4 - drawing 9 is performed, and an example which interlocks a picture displayed on the special pattern display for indication 24 and the movable components 80, 82, and 84 is explained, referring to drawing 10 - drawing 12. An interlocking example of a picture and a movable component is shown in drawing 10 - drawing 12. This example shows an example of a case which is "becoming it a great success", and omits a graphic display and explanation about a case of a "blank" by which it is generated mostly.

[0039]First, in the viewing area of the special pattern display for indication 24 shown in drawing 10 - drawing 12, a pattern group is changed, the left figures 90, the middle figures 92, and the right figures 94 are stopped, and it has three variable regions which can be displayed. As shown in drawing 10 (A), it is begun to fluctuate pattern groups, if change of a pattern group is started (Step S44 of drawing 6, S52) almost all at once in 3 variable regions. In between [after beginning change of a pattern group until it reaches reach (necessary timing)], as a reach advance notice, (Step S60 of drawing 7). The movable components 80, 82, and 84 are taken down to the state which shows in drawing 10 (B) almost all at once (or individually), and the movable components 80, 82, and 84 are retracted in the state which shows in drawing 10 (A) immediately. Therefore, the game person who looked at the motion of the movable components 80, 82, and 84 concerned can guess becoming reach. If it becomes reach after that (Step S66 of drawing 7), as shown in drawing 11 (A), the left figures 90 and the right figures 94 (this example both pattern "7") as a reach pattern will be displayed. The movable components 80, 82, and 84 enter in the viewing area of the special pattern display for indication 24, and the character 96 appears in the special pattern display for indication 24 (Step S84 of drawing 8). In this way, the game person who saw the character 96 and the movable components 80, 82, and 84 appear will come to look at the special pattern display for indication 24 with the hope which expects privileges, such as great success, if the appearance concerned corresponds to an expectation degree. The character 96 which appeared in the special pattern display for indication 24 tends to approach either of the movable components 80, 82, and 84, and tends to be moved, or it is going to catch it. That is, the character 96 tries to move the movable components 80, 82, and 84.

[0040]Then, the character 96 and the movable components 80, 82, and 84 which appeared in the

special pattern display for indication 24 interlock and move within the limits of the number of times n of linkage (Step S86 of drawing 8). That is, as shown in drawing 11 (B), the character 96 and the movable components 80, 82, and 84 align and move. Only the movable component 82 whose movable component 84 is still the state where it withdrew and which is near the character 96 with the state where it got down from the movable component 80 is moving by the example of drawing 11 (B) to the sliding direction (arrow D4 direction to illustrate). That is, if the movable component 82 will also move to Drawings above if the character 96 moves to Drawings above, and the character 96 moves to Drawings down, the movable component 82 will also move to Drawings down. At this time, it seems that the character 96 did the operation to the movable components 80, 82, and 84 from a game person etc. If a view is changed, when the movable components 80, 82, and 84 will move, it seems that the character 96 is moving, and it seems that the movable components 80, 82, and 84 did the operation to the character 96 in this case. Thus, the motion which interlocks mutually can be similarly applied in the relation between the character 96 and the movable components 80 and 84. In this case, in addition, it is good to perform linkage which the character 96 moved and mentioned above near either of the movable components 80, 82, and 84. If it carries out like this, as for all or a part of all or a part of movable components 80, 82, and 84, or movable components 80, 82, and 84, the character 96 seems to move the character 96 from a game person etc. Therefore, game persons come to see with interest.

[0041] If the fluctuation velocity of pattern fluctuation is gradually reduced as shown in drawing 12 (A), game persons can recognize visually signs that the pattern which constitutes a pattern group is moving (by a diagram, a dashed line shows a pattern). At this time, linkage with the character 96 and a movable component is still continuing, and signs that the character 96 has caught the movable component 84 are shown in the example of drawing 12 (A). And if the number of times n of linkage is set to 0 (YES of Step S90 of drawing 8). The movable components 80, 82, and 84 withdraw into an original position, and disappear so that it may change from drawing 12 (A) to drawing 12 (B) (Step S92 of drawing 8). The star map handle 98 and the character 96 concerned of the red which imitated the movable component 84 which the character 96 caught interlock and move within the viewing area of the special pattern display for indication 24 (Step S94 of drawing 8). Thus, since the process in which the movable component of a real object enters in the viewing area of the special pattern display for indication 24, and moreover changes to a pattern is novel, game persons who look at the process concerned are looking, and are interesting. Therefore, since production which interlocks the character 96 and the movable components 80, 82, and 84 within the viewing area of the special pattern display for indication 24, and is powerful can be performed, it can avoid boring a game person etc. further.

[0042] According to the above-mentioned embodiment, the effect taken below can be acquired.

(1) If it corresponds to Claim 1 and the main control substrate 100 (motion-control part) moves the movable components 80, 82, and 84 (two or more movable bodies), It is the interlocking change processing and drawing 11 of [drawing 8, and drawing 12 as which a motion of the movable components 80, 82, and 84 is interlocked with, and the display control board 200 (image control part) displays the character 96 (picture) in the viewing area of the special pattern display for indication 24 [Reference] The movable components 80, 82, and 84 move within and without a viewing area, enter in a viewing area, or come out out of a viewing area. It seems from a game person etc. that a motion of the movable components 80, 82, and 84 is interlocked with at this time, and the character 96 moves. Game persons cannot know which movable component (movable body) will move among the movable components 80, 82, and 84. Therefore, since the character 96 moves according to a motion of the movable components 80, 82, and 84, it becomes powerful production, and the game person who looks at these is not bored further.

(2) So that it may correspond to Claim 2 and the motion of the character 96 and the motion of the movable components 80, 82, and 84 in the viewing area of the special pattern display for indication 24 may interlock, It is the interlocking change processing and drawing 11 of [drawing 8, and drawing

12 from which the display control board 200 moves the character 96, and the main control substrate 100 moves the movable components 80, 82, and 84 [Reference] That is, the movable components 80, 82, and 84 are moved according to a motion of the character 96, or the character 96 is moved according to a motion of the movable components 80, 82, and 84. Therefore, linkage with the character 96 and the movable components 80, 82, and 84 serves as production which changes to Oshi more and is powerful, and does not bore further the game person who looks at these.

(3) When it corresponds to Claim 3 and the movable components 80, 82, and 84 enter in the viewing area of the special pattern display for indication 24, it is the interlocking change processing and drawing 11 of [drawing 8, and drawing 12 from which the display control board 200 moves the character 96, or the main control substrate 100 moves the movable components 80, 82, and 84 [Reference] It is visible from a game person etc. in one side having done the operation to another side among the character 96 and the movable components 80, 82, and 84 at this time. Signs that exert an operation on the character 96 without substance from the movable components 80, 82, and 84 which have impossible substance actually by such control, or an operation is exerted on the movable components 80, 82, and 84 which have substance from the character 96 which does not have substance conversely can be directed. Therefore, linkage with the character 96 and the movable components 80, 82, and 84 serves as production which changes to Oshi more and is powerful, and does not bore further the game person who looks at these.

(4) So that it may correspond to Claim 4 and the motion of the movable components 80, 82, and 84 and the motion of the character 96 (pattern) in the viewing area of the special pattern display for indication 24 may interlock, It is the interlocking change processing and drawing 11 of [drawing 8, and drawing 12 from which the display control board 200 moves the character 96, and the main control substrate 100 moves the movable components 80, 82, and 84 [Reference] The character 96 is moved according to a motion of the movable components 80, 82, and 84, or the movable components 80, 82, and 84 are moved according to a motion of the character 96. Therefore, since a motion of the character 96 and a motion of the movable components 80, 82, and 84 interlock and move, it becomes powerful production, and the game person who looks at these is not bored further. Since privileges, such as big hit games, are given as a big hit pattern is displayed on the special pattern display for indication 24 as a result, the game person can play a game, expecting the privilege concerned.

[0043][Other embodiments] In the pachinko machine 10 (game machine) mentioned above, it is not limited for the structure of other portions, form, a size, construction material, arrangement, and an operating condition to the above-mentioned embodiment. For example, each of following forms adapting the above-mentioned embodiment can also be carried out.

(1) According to the above-mentioned embodiment, this invention was applied to the pachinko machine 10. It can replace with this form and this invention can be similarly applied to what is other game machines (for example, a slot machine, a pachislot machine, a ball arranging machine, a mahjong ball game machine, a video game machine, etc.) other than a pachinko machine, and was provided with a picture display part and two or more movable bodies, being concerned — others — since a picture changes according to a motion of a movable body even if it is a game machine, the game person who looks at a picture display part is not bored further.

[0044](2) According to the above-mentioned embodiment, the movable components 80, 82, and 84 which reciprocating movement was possible to the sliding direction, and imitated the star in it were applied as two or more movable bodies [refer to drawing 2, drawing 11, and drawing 12]. It may replace with this form and two or more movable components which can be rotated, respectively may be applied as two or more movable bodies. It explains referring to drawing 13 for this example. It is what replaces the complex device 300 shown in drawing 13 with the complex device 14 shown in drawing 1, and is provided on the game board surface 12. The heavens prize port 302 equivalent to a general prize port. A picture. The number of the special pattern display for indication 312 which can be displayed, the movable component 306,308,310 which imitated the hammer in which the motion

which is rotatable to a prescribed direction and enters in the viewing area of the special pattern display for indication 312 is possible, and the pachinko ball which usually passed through the gate 32 during change of a pattern. It has the reserved ball lamp 304 to display and reserved ball lamp which displays the number of pachinko ball which won a prize of 1st type start opening 30 or lower start opening 68 during change of special pattern 314 grade. It is possible for the movable component 308 to be constituted so that it may rotate from drivers, such as a solenoid which is not illustrated and a motor, through a torque transmission member to a sliding direction (arrow D6 direction to illustrate), and to enter in the variable region corresponding to middle figures. It is similarly constituted by the movable component 306,310 and it is possible to enter in each variable region corresponding to left figures and right figures.

[0045] In this composition, the movable component 306,308,310 is first positioned to the original position shown with a two-dot chain line. And when suspending the pattern fluctuation concerned after starting pattern fluctuation in three variable regions, as shown in drawing 10 (A), the movable component corresponding to the variable region which it is going to stop is swung down. this — swinging down — in order to make a game person etc. think that the movable component ***** (ed) actually struck the display screen, the pattern fluctuation of a corresponding variable region is suspended. In this way, the special pattern (left figures, middle figures, right figures; picture) displayed on the viewing area of the special pattern display for indication 24 can be changed. In order to make a game person etc. think that there was furthermore a shock, animation which continues swaying a special pattern and a background figure handle for a while is performed, or a crashing sound, a vibration sound, etc. are taken out from the loudspeaker 50. If it carries out like this, a more interesting display can be realized and presence will also increase. Thus, when the movable component 306,308,310 enters in the viewing area of the special pattern display for indication 24 and changes a special pattern, a background figure handle, etc., it becomes powerful production and can carry out by not boring a game person further.

[0046] (3) According to the above-mentioned embodiment, the movable components 80, 82, and 84 which can move reciprocally were applied to the sliding direction as two or more movable bodies at the upper part side of the complex device 14 [refer to drawing 2, drawing 11, and drawing 12]. It may replace with this form and two or more movable components which can move reciprocally may be applied to a sliding direction as two or more movable bodies at the lower part side of a complex device. It explains referring to drawing 14 for this example. It is what replaces the complex device 400 shown in drawing 14 with the complex device 14 shown in drawing 1, and is provided on the game board surface 12. The heavens prize port 402 equivalent to a general prize port, A picture. The number of the special pattern display for indication 406 which can be displayed, the movable component 408,410,412 which imitated the alligator in which the motion which is rotatable to a prescribed direction and enters in the viewing area of the special pattern display for indication 406 is possible, and the pachinko ball which usually passed through the gate 32 during change of a pattern. It has the reserved ball lamp 404 to display and reserved ball lamp which displays the number of pachinko ball which won a prize of 1st type start opening 30 or lower start opening 68 during change of special pattern 414 grade. It is what ornamented by piercing a plate, and constitutes, and the movable component 410 goes in and out from the entrance 418 with which the complex device 400 was equipped. It is fixed to the rack 436 and this movable component 410 fixes to the axis of rotation of the motor 424 the pinion 430 which gears with that rack 436. The motor 424 replaces the motor 86 shown in drawing 3, and controls rotation by the main control substrate 100. Therefore, if rotation of the motor 424 is controlled from the main control substrate 100, movement magnitude, movement speed, etc. of the movable component 410 to a sliding direction (arrow D8 direction to illustrate) are controllable. It is similarly constituted by the movable component 408,412. That is, it is fixed to the rack 434,438, respectively, and goes in and out from the entrance 416,420, torque is transmitted through the pinion 428,432 fixed to the motor 422,426 axis of rotation, respectively, and it moves reciprocally to a sliding direction. The movable

component 408,410,412 is also the same as when animals (for example, a raccoon dog, a fox, etc.) other than an alligator are imitated and applied.

[0047] Since the above-mentioned movable component 408,410,412 is the almost same composition, and it is easy, the motion which interlocks about the example of the movable component 410 is explained. The introduction movable component 410 is positioned to the original position shown by the movable component 408,412. And in order to pretend that the movable component 410 bites about the special pattern (middle figures; picture) stopped after starting pattern fluctuation in three variable regions, as shown in drawing 10 (A), or the special pattern which it is going to stop soon, the corresponding movable component 410 is moved upward. And after moving the movable component 410 to the position which seems to have bit middle figures, the movable component 410 and middle figures are moved downward at the almost same speed. At this time, it seems that the movable component 410 which imitated the alligator has pulled middle figures to a game person. In this way, the special pattern displayed on the viewing area of the special pattern display for indication 24 can be changed. Since it imitates the alligator (animal), when the movable component 410 is changed so that the middle figures which are having bit in sight may be crushed, in addition, it is interesting. Thus, when the movable component 408,410,412 enters in the viewing area of the special pattern display for indication 24 and changes a special pattern, a background figure handle, etc., it becomes powerful production and can carry out by not boring a game person further.

[0048] Constituted the movable component 306,308,310 of the above (2), and the movable component 408,410,412 of (3) so that each might operate to a sliding direction, but. Even when it constitutes so that it may operate in the arbitrary directions like a longitudinal direction, an oblique direction, and a hand of cut or an operating direction is constituted so that a change is possible, the above-mentioned effect and same effect are acquired. It may interlock and move so that the movable component 306,308,310 and the movable component 408,410,412 may receive an operation in a target on the other hand by a picture of a special pattern displayed on the special pattern display for indication 24, or character 96 grade. For example, animation which strikes one of movable components by a picture displayed on the special pattern display for indication 24 is displayed. When it can be recognized as having seen from a game person etc. at this time, and having hit the movable component 306,308,310 and the movable component 408,410,412, that movable component 306,308,310 and movable component 408,410,412 are moved. In this way, since a mode to which a movable component moves to compensate for change of a picture is realized, a game person who looks at the special pattern display for indication 24 is not bored further.

[0049] (4) It is interlocking change processing and drawing 11 of [drawing 8, and drawing 12 which interlocked a motion of the character 96 and a motion of the movable components 80, 82, and 84 in the above-mentioned embodiment Reference] A motion of a background figure handle (ornament pattern) and a motion of the movable components 80, 82, and 84 may be interlocked. For example, if the display control board 200 changes scenery (for example, the sea, a mountain, a river, etc.) as a background figure handle, it will control so that the main control substrate 100 moves a movable body of the movable components 80 and 82 and 84 grades with the change concerned. Even if it is such linkage, it becomes powerful production, and it can carry out by not boring a game person further.

[0050] (5) According to the above-mentioned embodiment, the character 96 was applied as a picture or a pattern [refer to drawing 11 and drawing 12]. It may replace with this form and may apply as a picture or a pattern to what can be displayed on the special pattern display for indication 24 like the arbitrary patterns (a special pattern, a chance pattern, the Fig. 4 handle, an ornament pattern, etc.) displayed with the special pattern display for indication 24, a character, a sign, a mark and figures other than character 96, and an image. Since the movable components 80, 82, and 84 are interlocked with and it changes even if it is these pictures, the game person who looks at the special pattern display for indication 24 is not bored further. Although the special pattern display for indication 24 was applied as a picture display part, reference], the common pattern display 28, and

other displays for indication may be applied for (drawing 2, drawing 11, drawing 12, etc. Even if it is these displays for indication, change of a picture and the motion of a movable component which are displayed on the display for indication concerned can be interlocked. Therefore, the game person who usually looks at the pattern display 28 and other displays for indication is not bored further. although the special pattern display for indication 24 all boiled mostly the viewing area into which the movable components 80, 82, and 84 enter and it was applied, it is good also considering (drawing 11, drawing 12, etc. as some viewing areas of reference) and the special pattern display for indication 24, and it is good also as a viewing area of other displays for indication. It is possible to apply not only to one viewing area but to two or more viewing areas. In this case, the character 96 displayed on the viewing area of another side as one side may be independently displayed as a motion of the movable components 80, 82, and 84, or may be interlocked with a motion of the movable components 80, 82, and 84, and may be displayed. Since linkage with the character 96 and the movable components 80, 82, and 84 will change to Oshi more if it carries out like this, the game person who looks at the special pattern display for indication 24 is not bored further. And although the character 96 was moved within the viewing area of the special pattern display for indication 24 or the picture was changed in the mode which suspends change of a pattern group, (drawing 11, drawing 12, etc. may change a picture in reference) and other modes. As other modes, there are a mode which forms, such as form of a picture, color, and a size, change, a mode which begins change of a pattern group from a stopped picture, etc. Since linkage with a picture and two or more movable bodies changes to Oshi more even if it is such a mode, the game person who looks at the special pattern display for indication 24 is not bored further.

[0051](6) It is interlocking change processing of Step S70 of (drawing 7, and drawing 8 in which linkage with the character 96 and the movable components 80, 82, and 84 was realized after reach in the above-mentioned embodiment Reference) change of a pattern group which is replaced with this form (or — adding) and is performed before reach. If necessary timing is reached about all the modes which can be displayed with the special pattern display for indication 24 like the animation displays (ornament pattern etc.) in a probability variation and big hit games, it may constitute so that linkage with a picture and two or more movable components may be performed. For example, in change of a pattern group performed before reach, if the probability which becomes reach increases, a picture and two or more movable components will be interlocked. Since linkage with a picture and two or more movable components will change to Oshi more if it carries out like this, the game person who looks at the special pattern display for indication 24 is not bored further. The game person can play a game with the hope which becomes reach, a probability variation, etc.

[0052](7) According to the above-mentioned embodiment, the special pattern display for indication 24 which makes light emit (coloring) and displays a picture was applied as a picture display part. It can replace with this form and mechanical displays for indication, such as a drum display which displays the picture expressed with the display surface, can also be applied as a picture display part. For example, a drum display has 1 or two or more solids of revolution, arranges two or more pictures on the surface (namely, display surface) of the solid of revolution appropriately, and expresses them with it. In this way, the part where a game person can recognize the picture expressed with the solid of revolution is equivalent to a viewing area. And change of a pattern group, etc. are realized by carrying out the roll control of the solid of revolution for positive rotation, counterrotation, reciprocal rotation, revolving speed, etc. with drivers, such as a motor. If according to this composition you make it a motion of a movable component interlocked with and the roll control of a solid of revolution is performed, the picture in a viewing area can be changed. Therefore, the game person who looks at a picture display part is not bored.

[0053](8) According to the above-mentioned embodiment, it interlocked and the motion which takes down the movable components 80, 82, and 84 as a reach advance notice, and is retracted immediately was performed [refer to Step S60 of drawing 7, drawing 10 (A), and drawing 10 (B)]. When warning about the re change of not only a reach advance notice but a single pattern, the re

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when not appearing at all is made into 0% about the movable components 80, 82, and 84, an expectation degree in case any one appears is made into 30%, an expectation degree in case any two appear is made into 60%, and an expectation degree when appearing altogether is made into 90%. Or make an expectation degree in case the movable component 80 appears into 10%, and an expectation degree in case the movable component 82 appears is made into 30%. It is good also considering the values (for example, four operations, a function operation, etc.) which calculated the expectation degree concerning the movable component which made 50% the expectation degree in case the movable component 84 appears, and actually appeared as a final expectation degree. The game person who looked at the movable component which enters in the viewing area of the special pattern display for indication 24 can guess an expectation degree, and the hope which expects a privilege increases. This is applicable to the characters 96 (namely, a kind, the number, etc.) and other pictures of the other side to interlock (for example, a special pattern, an ornament pattern, etc.) similarly. When warning also about the re change of reach or a single pattern, the re change of a complete diagram handle, great success, and a probability variation (information), it can apply similarly to the case where the character 96 and the movable components 80, 82, and 84 are interlocked. In these cases, even if it is, the game person can guess an expectation degree and the hope which expects a privilege increases.

[0055](10) In addition, if it has any one functions, such as a function to change color of the movable components 80 and 82 and 84 (movable body) self, a function (display for indication) which displays a pattern, a function (photogen) which can be turned on, a mode of operation of the movable components 80, 82, and 84 can be diversified more. If how to move the movable components 80, 82, and 84 according to an expectation degree, color, the contents of the pattern, a state of lighting/putting out lights, etc. are changed, the game person who looked at a state of the movable components 80, 82, and 84 can guess an expectation degree more exactly, and a hope which expects a privilege will increase further.

[0056]

[Effect of the Invention]According to this invention, since a picture and two or more movable bodies are interlocked within a viewing area, it becomes powerful production, and it can carry out by not boring a game person further.

[Translation done.]

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TECHNICAL FIELD

[Field of the Invention]This invention relates to the game machine provided with a picture display part and two or more movable bodies.

[Translation done.]

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PRIOR ART

[Description of the Prior Art]In an image display unit, it is begun to fluctuate a pattern group in the pachinko machine which is one of the game machines, in two or more variable regions, if a pachinko ball wins a prize of predetermined regions (for example, a gate, a start opening, etc.) or it passes, respectively. The upset condition of such a pattern group is called "pattern fluctuation." And a privilege will be given to a game person, if change of a pattern group is suspended and a specified pattern is displayed on an image display unit as a result, after beginning pattern fluctuation and carrying out for a while.

[0003]By the way, only from the production by change and a stop of a pattern group, since a display became monotonous, the technology which the movable body provided in the specified position, for example in JP,H8-249204,A or JP,H8-141161,A rotates according to a picture was indicated. According to this technology, a motion of a movable body is also added to change of a picture, but a picture does not influence positively to a movable body conversely, without a movable body influencing positively to a picture. Therefore, the game person who got it used to seeing a few will get bored also with linkage of a picture and a movable body. Then, the applicant of this application indicated the technology in which a picture without the movable body which has substance in Tokuganhei11-200896 (unpublished), and substance performed production which interlocks within a viewing area. According to this technology, a picture changes according to a motion of a movable body, or a movable body moves to compensate for change of a picture. Therefore, it was able to carry out by not boring more the game person who looks at a movable body and a picture.

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EFFECT OF THE INVENTION

[Effect of the Invention]According to this invention, since a picture and two or more movable bodies are interlocked within a viewing area, it becomes powerful production, and it can carry out by not boring a game person further.

[Translation done.]

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TECHNICAL PROBLEM

[Problem to be solved by the invention]However, with technology indicated to Tokuganhei11-200896, only one movable body was only established. Therefore, even if it performed production by linkage with a picture and a movable body, it is only a movable body of 1 that is moved as substance, and it lacked force. This invention is made in view of such a point, and it aims at making it not bore a game person further by performing production which interlocks a picture and two or more movable bodies within a viewing area, and is powerful.

[0005]

[The means for solving a technical problem 1] The means for solving a technical problem 1 is as having indicated to Claim 1. Here, about a term indicated to Claim 1, it interprets as follows. The same can be said for a claim of others [interpretation / concerned], and the detailed description of the invention.

(1) All the things which can be displayed on a picture display part are included in "picture" like a special pattern and not only patterns usually, such as a pattern and an ornament pattern, but characters (an alphanumeric character, a Chinese character, etc.), a sign, a mark, a figure (a character etc. are included), and an image. Still Picture Sub-Division may be sufficient as a picture, and animations, such as animation, may be sufficient as it.

(2) Not only all of fields which can be displayed by a picture display part but a part of field concerned is included in "viewing-area."

(3) "picture display part" is good also as a display for indication (display device) of 1, and may consist of two or more displays for indication. A "viewing area" at the time of constituting from two or more displays for indication consists of all or a part of viewing areas of each display for indication.

(not only operation that a movable body enters so that it may see from the transverse plane of a game machine and may lap on a viewing area as 4) "a motion which enters in a viewing area" but operation to which the movable body which has moved from the outside of a picture display part changes and enters into the picture which imitated the movable body concerned within a viewing area is included. "A motion which enters in a viewing area at least" is the meaning which includes arbitrarily not only the motion that enters in a viewing area but the motion within a viewing area, the motion which comes out out of a viewing area, etc.

(in moving 5) "two or more movable bodies", at least two movable bodies may be moved almost simultaneous, after moving the movable body of 1, other movable bodies may be moved, and it contains all the modes to which two or more movable bodies move as a result. Almost simultaneous, two or more movable bodies may be moved so that it may enter in a viewing area, and it may move so that it may enter in a viewing area for every movable body to different timing.

[0006]According to the means 1 concerned, if a motion-control part moves two or more movable bodies, a motion of two or more movable bodies concerned will be interlocked with, and an image control part will display a picture on a viewing area. The movable body of this time plurality moves

within and without a viewing area, or comes out [entering in a viewing area ***, or] out of a viewing area. At this time, it seems that a motion of two or more movable bodies is interlocked with, and a picture changes from a game person etc. Game persons cannot know which movable body will move among two or more movable bodies. Therefore, it becomes the production where a picture changes according to a motion of two or more movable bodies and which is powerful, and the game person who looks at these is not bored further.

[0007]

[The means for solving a technical problem 2] The means for solving a technical problem 2 is as having indicated to Claim 2. A mode which begins change of a pattern group is also included from a mode which suspends change of not only a mode that changes a form of form of a picture, color, a size, a display position, etc. to here, a term indicated to Claim 2 "changing a picture" but a pattern group, and a stopped picture. The same can be said for a claim of others [interpretation / concerned], and the detailed description of the invention.

[0008]According to the means 2 concerned, an image control part changes a picture and a motion-control part moves two or more movable bodies so that change of a picture in a viewing area and a motion of two or more movable bodies may interlock. That is, two or more movable bodies are moved to compensate for change of a picture, or a picture is changed according to a motion of two or more movable bodies. At this time, game persons cannot know which movable body will move among two or more movable bodies. Therefore, linkage with a picture and two or more movable bodies serves as production which changes to Oshi more and is powerful, and does not bore further a game person who looks at these.

[0009]

[The means for solving a technical problem 3] The means for solving a technical problem 3 is as having indicated to Claim 3. A term indicated to Claim 3 here

[Translation done.]

* NOTICES *

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1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.*** shows the word which can not be translated.

3.In the drawings, any words are not translated.

OPERATION

"OPERATION" is the operation which is accompanied [to strike (it strikes)] by motion like dropping [which is taken / which is pulled / to push / up and down]. The same can be said for a claim of others [interpretation / concerned], and the detailed description of the invention.

[0010]According to the means 3 concerned, if two or more movable bodies enter in a viewing area, an image control part will change a picture or a motion-control part will move two or more movable bodies. It is made visible [change of the picture concerned or a motion of a movable body] in one side having done an operation to another side among a picture and two or more movable bodies. Signs that exert an operation on a picture without substance from two or more movable bodies which have impossible substance actually by such control, or an operation is exerted on two or more movable bodies which have substance from a picture without substance can be directed. Therefore, linkage with a picture and two or more movable bodies serves as production which changes to Oshi more and is powerful, and does not bore further a game person who looks at these.

[0011]

[The means for solving a technical problem 4] The means for solving a technical problem 4 is as having indicated to Claim 4. A mode which begins change of a pattern group is also included from a mode which suspends change of not only a mode that changes a form of form of a pattern, color, a size, a display position, etc. to here, a term indicated to Claim 4 "changing a pattern" similarly saying "a picture is changed" but a pattern group, and a stopped pattern. The same can be said for a claim of others [interpretation / concerned], and the detailed description of the invention.

[0012]According to the means 4 concerned, an image control part changes a pattern and a motion-control part moves two or more movable bodies so that change of a pattern in a viewing area and a motion of two or more movable bodies may interlock. That is, a pattern changes according to a motion of two or more movable bodies, or two or more movable bodies move to compensate for change of a pattern. Therefore, since a motion of two or more movable bodies and change of a pattern interlock and move, it becomes powerful production, and a game person who looks at these is not bored further. Since a privilege is given as a specified pattern is displayed on a picture display part as a result, the game person can play a game, expecting a privilege.

[0013]

[Mode for carrying out the invention]Hereafter, an embodiment in this invention is described based on Drawings. This embodiment is the example which applied this invention to a pachinko machine provided with two or more movable bodies, and it is described, referring to drawing 1 - drawing 12. [0014]A front view shows appearance of the pachinko machine 10 which is the 1st sort pachinko machine to drawing 1. On the game board surface 12 of the pachinko machine 10 shown in drawing 1, By the gate 32 which has the gate sensor 58 which detects a pachinko ball to pass, the passing mouths 26 and 62 which can pass a pachinko ball, the 1st type start opening 30 that has the start opening sensor 60 which detects a pachinko ball which won a prize, and the solenoid 54. The big prize port 34 which has the lid 74 opened and closed, the special pattern display for indication 24

mentioned later, the reserved ball lamp 20, the complex device 14 which has 22 grades complexly, other general prize ports, a windmill, a nail, etc. are arranged suitably. The manual operation button 48 (final controlling element) in which a game person operates it to the pachinko machine 10 in a lower part of the game board surface 12, The lower dish 44 which stores temporarily a pachinko ball containing awarded balls, It has the handle 40 provided with the ash pan 46 into which a cigarette end of tobacco, etc. are put, and the touch sensor 42 which detects whether a game person's hand is touching, the loudspeaker 50 which provides in an inside of the top plate 38 which is a saucer of awarded balls, and makes sounds (a sound effect, music, etc.), etc. It has the lamps 16 which consist of a photogen arranged at a suitable position according to the frame opening sensor 36 which detects opening of the glass frame 18 (it is also called a "metal flask" to others.), a game content of the pachinko machine 10, etc. Furthermore, the top plate 38 is equipped with returning switch 72 grade which orders it the ball rental switch 64 which orders it ball rental, and return of a prepaid card.

[0015]The passing mouth 26 arranged on the game board surface 12 is equipped with the common pattern display 28 which changes or stops and usually displays a pattern. Change starts and the pattern display 28 usually stops after specified time elapse, when it has a piece or two or more photogens (for example, LED which can emit light with plural colors, such as green, red, and orange) and a pachinko ball passes to the gate 32. It changes by specifically blinking a photogen, and if a specific photogen stops in the state of switching on the light in a specific color (or putting out lights), only fixed time (for example, for 4 seconds) will open the lid of the lower start opening 68. the V zone 56 where the big prize port 34 will become continuable within a necessary round number (for example, 16 rounds) about a big-hit-games state if a pachinko ball other than the above-mentioned lid 74 wins a prize within a big prize port opening period (for example, for 20 seconds) — awarded balls are only paid out — it usually has a prize port etc. In order to detect the pachinko ball which won a prize, in the V zone 56, it has V zone sensor 52, and has the prize sensor 70 in the above-mentioned common prize port, respectively. The lower start opening 68 provided with the start opening sensor 66 which detects the pachinko ball which won a prize under the big prize port 34 is established. The lower start opening 68 concerned is provided with a function equivalent to the 1st type start opening 30, and all as well as the usual prize port will pay out awarded balls, if a pachinko ball wins a prize.

[0016]The heavens prize port 76 equivalent to a prize port with the general complex device 14 expanded and shown in drawing 2 (A), A picture. The movable components 80, 82, and 84 in which a motion which is movable to the special pattern display for indication 24 and a prescribed direction (for example, sliding direction) which can be displayed, and enters in a viewing area of the special pattern display for indication 24 is possible, and the number of a pachinko ball which usually passed through the gate 32 during change of a pattern. It has the reserved ball lamp 20 to display and reserved ball lamp which displays the number of pachinko ball (namely, reserved ball) which won a prize of 1st type start opening 30 or lower start opening 68 during change of special pattern 22 grade. Hereafter, the number of a reserved ball which can be recognized by the display of the reserved ball lamp 22 is called "the number of reserved balls." The special pattern display for indication 24 equivalent to a picture display part displays not only a special pattern but a character, a sign, a mark, a figure, an image, etc. using a liquid crystal display. If a pachinko ball wins a prize of the 1st type start opening 30 or the lower start opening 68, it is begun to change a special pattern displayed on the special pattern display for indication 24, and if it goes through predetermined time, it will stop. Not only a mode stopped thoroughly but a mode which displays the state of going back and forth and moving by a prescribed range to a prescribed direction is included in the stop concerned. For example, a pattern also includes the state of shaking to a sliding direction slightly in a stop. What kind of display for indication which can display a pattern may be used for the special pattern display for indication 24 like CRT, a LED display device, and a plasma display. Although the pattern display 28 and the special pattern display for indication 24 were usually used separately,

both sides may be made to serve a double purpose with the same display for indication. As for the reserved ball lamps 20 and 22, each consists of one piece or two or more photogens (for example, four LED).

[0017]As shown in drawing 2 (B), the movable component 82 which imitated a star is constituted by sliding direction (arrow D 2-way to illustrate) movable by the motor 86. Rotational movement which torque transmission members (not shown), such as a gear tooth, a belt, a chain, a rack & pinion, and a torque converter, were made to intervene, and was generated in a drive of the motor 86 is changed into an advance and retreat movement by a torque transmission member between the movable component 82 and the motor 86, and it transmits it to the movable component 82. In this way, the movable component 82 becomes movable to a sliding direction of Drawings. The advance and retreat movement of the movable components 80, 82, and 84 of each other can be independently carried out to a sliding direction by constituting this almost similarly about the movable components 80 and 84. Color the movable component 80 yellow, the movable component 82 is colored blue, and the movable component 84 is colored red, respectively. The cover body 88 is formed in the front-face side (an example of drawing 2 (B) left-hand side) of the special pattern display for indication 24 so that a game person etc. can touch neither the movable components 80, 82, and 84 nor the special pattern display for indication 24 directly.

[0018]Next, the main control substrate 100 (a motion-control part, a game control part) which realizes the pachinko game by the pachinko machine 10, It explains referring to drawing 3 in which these outline composition was shown for the display control board 200 (image control part) which displays a picture on the special pattern display for indication 24 in response to the display command sent from the main control substrate 100 concerned. These main control substrates 100 and display control boards 200 are provided in the back side of the pachinko machine 10. The main control substrate 100 shown in drawing 3 is constituted focusing on CPU(processor) 110, A game control program and necessary game data. (For example, a great success value) etc. ROM112, various kinds of random numbers, data, an input output signal, etc. to store. RAM114 to store and the signal sent from various kinds of input devices. The input processing circuit 102 which is received and is changed into the data format which can be processed within the main control substrate 100, the output processing circuit 104 which operates various kinds of output units in response to the operation data sent from CPU110, and the indicative data sent from CPU110. It has the display control circuit 106 which wins popularity and displays various kinds of photogens suitably (lighting and putting out lights are included), and communication control circuit which transmits necessary data to display control board 200 116 grade. Each of these components is mutually combined with the bus 118.

[0019]Although CPU110 executes a game control program stored in ROM112 and a game by the pachinko machine 10 is realized, a program for realizing the 1st type start opening processing etc. which are mentioned later is also included in the game control program concerned. Although DRAM is used for RAM114 ROM112 using EPROM, a memory of other kinds may be used, being concerned — others — there are EEPROM, SRAM, a flash memory, etc. as a memory of a kind. As an input device with which the input processing circuit 102 receives a signal, there are the start opening sensor 60, the gate sensor 58, a prize sensor (V zone sensor 52 grade), or other sensors (the touch sensor 42, frame opening sensor 36 grade), for example. As an output unit with which the output processing circuit 104 outputs a signal, there is solenoid 54 grade, for example. As a photogen which the display control circuit 106 displays, there is the lamps 16, the reserved ball lamps 20 and 22, or common pattern display 28 grade, for example. The communication control circuit 116 can transmit necessary data also to a frame control board, a hall computer, etc. which are not illustrated further if needed.

[0020]Next, the display control board 200 is constituted focusing on CPU210, RAM204 which stores ROM202 which stores a display control program and necessary indicative datas (for example, display information, two or more variation patterns, etc. corresponding to a display command), a display

command, display information, an input output signal, etc., and data transmitted from the main control substrate 100. It has the VDP(Video Display Processor)214 grade which processes and displays a picture to the special pattern display for indication 24 in response to the communication control circuit 206 received and carried out, the character generator 212 which generates a necessary picture, and display information sent from CPU210. Each of these components is mutually combined with the bus 208.

[0021]Although CPU210 executes the display control program stored in ROM202 and a picture is displayed on the special pattern display for indication 24, the program for realizing picture display processing etc. which are mentioned later is also included in the display control program concerned. Although DRAM is used for RAM204 ROM202 using EPROM, the memory of other kinds may be used. being concerned — others — there are EEPROM, SRAM, a flash memory, etc. as a memory of a kind. The communication control circuit 206 can transmit necessary data also to a frame control board, a hall computer, etc. which are not illustrated further if needed. As a picture which the character generator 212 generates, there are animations, such as a character, a pattern, and animation, Still Picture Sub-Division, an image, etc., for example. VDP214 which has VRAM, palette RAM, etc., The data of the character corresponding to display information, a pattern, a background, etc. is generated and read with the character generator 212, and after performing image editings, such as color scheme specification and sprite processing, and carrying out data expansion to VRAM or palette RAM, a video signal, a synchronized signal, etc. are eventually outputted to the special pattern display for indication 24. Processing which changes or stops and displays two or more pattern groups simultaneous or un-simultaneous with the sprite function realized by performing sprite processing at this time can be performed at high speed.

[0022]In the pachinko machine 10 constituted as mentioned above, in order to realize this invention, procedure performed by the main control substrate 100 or the display control board 200 is explained with reference to drawing 4 – drawing 9. To drawing 4, here the contents of the 1st type start opening processing which realizes winning—a-prize distinction of a pachinko ball to the 1st type start opening 30, The contents of pattern fluctuation processing which realizes a display which changes for it or stops a pattern group to the special pattern display for indication 24 to drawing 5. The contents of fluctuation displaying processing which realizes a display since it begins to change a pattern group to drawing 6, until it stops to drawing 7. The contents of reach processing which realizes change based on a reach display and a reach pattern, The contents of interlocking change processing in which linkage (a synchronization, alignment) with a picture displayed on a motion and the special pattern display for indication 24 of the movable components 80, 82, and 84 is realized to drawing 8. A flow chart shows the contents of picture display processing as which the display control board 200 which received a display command sent from the main control substrate 100 in drawing 9 performs an image editing, and displays a picture on the special pattern display for indication 24, respectively. The 1st type start opening processing, pattern fluctuation processing, fluctuation displaying processing, reach processing, and interlocking change processing among these processings, CPU110 executes a game control program stored in ROM112 in the main control substrate 100 shown in drawing 3 to suitable timing (for example, cycle in every 4 milliseconds), and all are realized. In the display control board 200, to suitable timing, CPU210 and VDP214 execute a program and realize picture display processing.

[0023]Here, although "it adds" as used in the following explanation means that only 1 usually increases the number of reserved balls, the case where it increases two or more [every] suitably according to a game position etc. is included. On the other hand, it is the same as that of the case where it adds except for the point of reducing the number of the reserved balls "to subtract." Since the 1st type start opening 30 and the lower start opening 68 function similarly, in order to explain simply, they make the 1st type start opening 30 an example, and are explained. Three right-hand side variable regions are divided for change or the stop of a pattern group performed with the special pattern display for indication 24, a left-hand side and inside side changes a pattern group to

it, respectively, and the mode which stops middle figures to the variable region by the side of inside, and stops right figures for left figures to a right-hand side variable region in a left-hand side variable region is applied to it.

[0024]In the 1st type start opening processing shown in drawing 4, it is distinguished whether the pachinko ball won first a prize of the 1st type start opening 30. [Step S10] if a detecting signal is specifically received from the start opening sensor 60 in drawing 1 and drawing 3 — having won a prize (YES) — it distinguishes and distinguishes from (NO) which has not won a prize if the detecting signal concerned is not received. If a pachinko ball wins a prize of the 1st type start opening 30, it will be distinguished whether the number of reserved balls reached upper limit (for example, 4). [Step S12] If the number of reserved balls has not reached upper limit, (NO) and its number of reserved balls are added. [Step S14] LED of the reserved ball lamp 22 is turned on according to the added number of reserved balls. Then, various random numbers are read and memorized. [Step S16] The 1st type start opening processing is ended. When the pachinko ball has not won a prize of the 1st type start opening 30 (NO of Step S10), or when the number of reserved balls reaches upper limit (YES of Step S12), the 1st type start opening processing is ended as it is. [0025]By the various random numbers which are read at the above-mentioned step S16, and are memorized to RAM114. The random number RB for big hit patterns used since the big hit pattern (a specified pattern should put together) stopped and displayed on the special pattern display for indication 24 is specified when distinguished from great success by random number RA for a great success judging used for distinction of being great success, and random number RA for a great success judging, Random number RC for reach patterns used since a display pattern after reaching reach according to the reach pattern (a prescribed pattern should put together) etc. which were displayed on the special pattern display for indication 24 until it suspends change is specified. There are the random number RE for numbers of times operation etc. which are used in order to determine the number of times n of linkage of random number RD for probability variations used in order to distinguish whether the probability which is becoming it a great success is changed after being becoming it a great success, the movable components 80 and 82, and 84 grades. "Reach" or a "reach condition" means the state where other special patterns are in agreement with a reach pattern, except for the remaining special patterns still changed.

[0026]In the pattern fluctuation processing shown in drawing 5, it is distinguished first whether the number of reserved balls is a positive number (that is, number of reserved balls >0 is filled). [Step S20] the time of the number of reserved balls being 0 or a negative number — (NO) — pattern fluctuation processing is ended as it is. On the other hand, when the number of reserved balls is a positive number, the number of reserved balls is subtracted in preparation for the processing on and after (YES) and next time. [Step S22] LED of the reserved ball lamp 22 is turned on according to the subtracted number of reserved balls. And it is reading about random number RA for a great success judging memorized at Step S16 of drawing 4. [Step S24] Fluctuation displaying processing is performed. [Step S28] The concrete contents of fluctuation displaying processing are explained referring to drawing 6.

[0027]In fluctuation displaying processing shown in drawing 6, it is distinguished first whether it is "great success." [Step S40] It distinguishes by whether random number RA for a great success judging read at Step S24 of drawing 5 is specifically in agreement with a great success value. although one or more great success values come out, if a game position (for example, probability variation) etc. change, the number of a great success value may be changed. It is reading about the random number RB for big hit patterns memorized at Step S16 of (YES) and drawing 4 when distinguished from "great success." [Step S42] A pattern (it calls the following "stop schedule pattern".) which is due to stop eventually and to be decided based on a value of the random number RB for big hit patterns concerned is determined, and it progresses to Step S44 mentioned later that it should be begun to fluctuate a pattern group. When distinguished from a "blank" at Step S40, in order to display (NO) and a blank pattern on the special pattern display for indication 24 on the

other hand, after shifting and reading pattern data from RAM114 [Step S52] It is distinguished whether a reach pattern is included in the blank pattern concerned. [Step S54] .Combination of left figures and right figures corresponds and a reach pattern is the same pattern (what is called a Zorro eye) in the usual pachinko machine 10. Supposing it includes a reach pattern (YES), it will progress to Step S44 later mentioned since reach is reached on the way, although it becomes a "blank" eventually. If a reach pattern is not included, it is begun like (NO) and Step S44 on the other hand, to change a pattern group. [Step S56] After changing based on a predetermined variation pattern, it shifts and stops in a pattern. [Step S58] It progresses to Step S48 mentioned later. In the above-mentioned step S56 and S58, a display command corresponding, respectively is sent to the display control board 200, and it realizes.

[0028]After sending a display command to the display control board 200 and beginning to change a pattern group [Step S44] Reach processing is performed. [Step S46] .It supposes that processing performed by the display control board 200 is mentioned later, and it explains, referring to [drawing 7](#) for the concrete contents of reach processing first. Reach processing shown in [drawing 7](#) reports a reach advance notice to a game person etc. first. [Step S60] .Immediately after making the movable components 80, 82, and 84 enter into a viewing area of the special pattern display for indication 24, specifically, it returns to an original position (reference position). At this time, it seems for the movable components 80, 82, and 84 to get down, and to withdraw immediately to a game person. And it is reading about random number RC for reach patterns memorized at Step S16 of [drawing 4](#). [Step S62] A reach pattern is determined. [Step S64] .It opts for determination of a reach pattern according to the 1st data table etc. that were memorized by ROM112 grade based on a stop schedule pattern determined, for example at Step S42 (or step S52) of [drawing 6](#), and random number RC for reach patterns read at Step S62 of [drawing 7](#). The 1st data table concerned specifies relation between a stop schedule pattern (or gap of a pattern between a reach pattern and middle figures), and random number RC for reach patterns.

[0029]In this way, after determining a reach pattern, a display command is sent to the display control board 200, and a reach pattern (the Fig. 1 handle, the Fig. 2 handle) is displayed on the special pattern display for indication 24 at the special pattern display for indication 24. [Step S66] .The Fig. 1 handle is left figures and the Fig. 2 handle is right figures. A reach pattern may be displayed only on the special pattern display for indication 24 and other displays for indication, and may be displayed on the both sides. Since a reach pattern etc. will be displayed also on displays for indication other than special pattern display—for indication 24 if it carries out like this, it becomes easy to recognize what a reach pattern is. When displaying a reach pattern, it may report having reached reach further to a game person. As the information concerned, a character, predetermined animation, etc. of "reach" are displayed, for example, a sound and a specific sound effect are taken out from the loudspeaker 50, and there is a mode of vibrating a chair in which the handle 40 which a game person touches, and a game person sit down. If it carries out like this, the game person can recognize having reached reach more certainly.

[0030]Then, a reach pattern determined at Step S64 divides processing by whether it is a specific reach pattern. [Step S68] .It is a deed about change with a reach pattern which sent a display command to (NO) and the display control board 200, and was determined as them at Step S64 when it was not a specific reach pattern. [Step S74] Pattern fluctuation is suspended and a final drawing handle (Fig. 3 handle) is displayed. [Step S72] .The Fig. 3 handle is middle figures and a special pattern (left figures, middle figures, right figures) in this lottery decides it. On the other hand, when it is a specific reach pattern in Step S68, (YES) and interlocking change processing are performed. [Step S78] .It explains referring to [drawing 8](#) for the concrete contents of the interlocking change processing concerned.

[0031]Read the random number RE for numbers of times operation first memorized at Step S16 of [drawing 4](#) in the interlocking change processing shown in [drawing 8](#). [Step S80] According to the 2nd data table etc. that were memorized by the ROM112 grade based on the random number RE for

numbers of times operation concerned, the number of times n of linkage is determined. [Step S82] The 2nd data table specifies the relation between the random number RE for numbers of times operation, and the number of times n of linkage. If a fixed relation is given to the expectation degree (reliability) with which the ease of becoming is expressed to the number of times n of linkage, and great success (for example, an expectation degree will also become high if the number of times n of linkage increases), the game person can guess an expectation degree with the length of the period when linkage is performed. Then, while moving the movable components 80, 82, and 84 and making it enter in the viewing area of the special pattern display for indication 24 as preparation for performing linkage with a picture and two or more movable bodies, the character 96 (references, such as drawing 11) is made to appear in the special pattern display for indication 24. [Step S84] The number of a movable component made to enter in the viewing area concerned is arbitrary.

[0032] And until the number of times n of linkage determined at Step S82 is set to 0, [Step S90] While reducing the number of times n of linkage every [1] [Step S96] The production which interlocks a motion of the character 96 and a motion of the movable components 80, 82, and 84 is repeated, and is performed. [Step S86] By production of the linkage concerned, it seems that one side did the operation to another side among the character 96 and the movable components 80, 82, and 84 from a game person etc. That you make it a motion of the movable components 80, 82, and 84 interlocked with if needed may include not only the character 96 but an ornament pattern (background figure handle). [Step S88] Since the mode of linkage will be diversified if it carries out like this, enjoyment increases more. If the production which interlocked is repeated and the number of times n of linkage amounts to 0 (YES of Step S90), while returning the movable components 80, 82, and 84 to an original position [Step S92] After performing production which interlocks the character 96 and the pattern which imitated the movable components 80, 82, and 84 [Step S94] Interlocking change processing is ended. If linkage with the character 96 and the pattern which imitated the movable components 80, 82, and 84 is changed according to an expectation degree, the game person who looked at the linkage concerned can guess an expectation degree.

[0033] If the above-mentioned interlocking change processing is performed, the game person who looked at linkage with the character 96 and the movable components 80, 82, and 84 will come to look at a motion of the character 96 and the movable components 80, 82, and 84, expecting to stop by a desirable special pattern. Since the number of times n of linkage determined at Step S82 changes with values of the random number RE for numbers of times operation each time, the game person cannot predict during what period linkage continues. Therefore, with the pleasure which looks at the special pattern display for indication 24, the game person can play a game to a thrill with a hope depending on the length of the period when the character 96 and the movable components 80, 82, and 84 interlock. The number of times n of linkage may be fixed to prescribed frequency (for example, 3 times) if needed.

[0034] After finishing interlocking change processing, it returns to drawing 7, and pattern fluctuation is suspended, and a final drawing handle is displayed. [Step S72] Reach processing is ended. In this way, after finishing reach processing, it returns to drawing 6 and it is distinguished whether it is a probability variation. [Step S48] When distinguished from a probability variation, after performing (YES) and probability variation processing [Step S50] Fluctuation displaying processing is ended. Whether random number RD for probability variations which memorized whether it was a probability variation at Step S16 of drawing 4 is in agreement with a specified value performs. About the contents of probability variation processing, since it is well-known, a graphic display and explanation are omitted. On the other hand, if it is not a probability variation (NO of Step S48), fluctuation displaying processing will be ended as it is. If probability variation processing is performed, the probability which stops by a big hit pattern and is becoming it a great success after change will increase, and the fluctuation period of a special pattern will be shortened until it becomes next great success after this end of big hit games. The probability which hits after change, stops in a pattern

and becomes a hit increases, and the fluctuation period of a pattern is usually shortened.

[0035]After finishing fluctuation displaying processing, it returns to drawing 5 and it is distinguished whether it is great success. [Step S28]. With the reliable pachinko machine 10, it is distinguished whether it is "great success" based on the above-mentioned random number RA for a great success judging that it is hard to be influenced by an extraneous noise etc. The special pattern actually displayed on the special pattern display for indication 24 if needed may distinguish whether it is great success by whether it is in agreement with a big hit pattern. If it "great success" Becomes (YES), it will be a deed about great success processing. [Step S30] Pattern fluctuation processing is ended. Great success processing performs big hit games, such as only fixed time (for example, for 30 seconds) opening the lid 74 of the big prize port 34 wide, for example, and paying out awarded balls according to the number of the pachinko balls which won a prize. if it "blank" becomes by distinction of Step S28 on the other hand — (NO) — pattern fluctuation processing is ended as it is.

[0036]Next, it explains, referring to drawing 9 for the picture display processing performed by the display control board 200. Here, the display command sent from the main control substrate 100 is assumed to be what is memorized by the receive buffer provided in the RAM204 grade shown in drawing 3 with the separate processing program executed by reception interruption etc. timely. It is reading about the display command which CPU210 memorized to the receive buffer first in the picture display processing shown in drawing 9. [Step S100] An indicative data is acquired based on the read display command, and it memorizes to RAM204. [Step S102]. An indicative data is acquired with reference to the data table which specified the relation between a display command and an indicative data, and was more specifically memorized in the ROM202 grade. This indicative data is a data element (parameter) for performing an image editing, for example, has a status number, a left-figures number, left position coordinates, a middle-figures number, an inside position coordinate, a right-figures number, the right position coordinate, an animation number, a status flag, an animation timer, etc. In this way, 210 which acquired the acquired indicative data transmits the indicative data concerned to VDP214.

[0037]VDP214 which received an indicative data from CPU210 extracts data of a character, a pattern, a background, etc. from the character generator 212 based on the indicative data concerned. [Step S104] After performing image editings, such as color scheme specification and sprite processing [Step S106] Data is developed on VRAM or palette RAM. [Step S108]. And developed data is changed into a picture signal and it outputs to the special pattern display for indication 24. [Step S110]. In this way, a pattern etc. which were edited based on an indicative data can be displayed on the special pattern display for indication 24. Since it carries out by VDP214 by making an image editing into hardware, a picture can be displayed at high speed.

[0038]Next, each processing shown in above-mentioned drawing 4 – drawing 9 is performed, and an example which interlocks a picture displayed on the special pattern display for indication 24 and the movable components 80, 82, and 84 is explained, referring to drawing 10 – drawing 12. An interlocking example of a picture and a movable component is shown in drawing 10 – drawing 12. This example shows an example of a case which is "becoming it a great success", and omits a graphic display and explanation about a case of a "blank" by which it is generated mostly.

[0039]First, in a viewing area of the special pattern display for indication 24 shown in drawing 10 – drawing 12, a pattern group is changed, the left figures 90, the middle figures 92, and the right figures 94 are stopped, and it has three variable regions which can be displayed. As shown in drawing 10 (A), it is begun to fluctuate pattern groups, if change of a pattern group is started (Step S44 of drawing 6, S52) almost all at once in 3 variable regions. In between [after beginning change of a pattern group until it reaches reach (necessary timing)], as a reach advance notice, (Step S60 of drawing 7). The movable components 80, 82, and 84 are taken down to the state which shows in drawing 10 (B) almost all at once (or individually), and the movable components 80, 82, and 84 are retracted in the state which shows in drawing 10 (A) immediately. Therefore, the game person who

looked at a motion of the movable components 80, 82, and 84 concerned can guess becoming reach. If it becomes reach after that (Step S66 of [drawing 7](#)), as shown in [drawing 11 \(A\)](#), the left figures 90 and the right figures 94 (this example both pattern "7") as a reach pattern will be displayed. The movable components 80, 82, and 84 enter in a viewing area of the special pattern display for indication 24, and the character 96 appears in the special pattern display for indication 24 (Step S84 of [drawing 8](#)). In this way, a game person who saw the character 96 and the movable components 80, 82, and 84 appear will come to look at the special pattern display for indication 24 with a hope which expects privileges, such as great success, if the appearance concerned corresponds to an expectation degree. The character 96 which appeared in the special pattern display for indication 24 tends to approach either of the movable components 80, 82, and 84, and tends to be moved, or it is going to catch it. That is, the character 96 tries to move the movable components 80, 82, and 84. [0040] Then, the character 96 and the movable components 80, 82, and 84 which appeared in the special pattern display for indication 24 interlock and move within the limits of the number of times n of linkage (Step S86 of [drawing 8](#)). That is, as shown in [drawing 11 \(B\)](#), the character 96 and the movable components 80, 82, and 84 align and move. Only the movable component 82 whose movable component 84 is still the state where it withdrew and which is near the character 96 with the state where it got down from the movable component 80 is moving by the example of [drawing 11 \(B\)](#) to the sliding direction (arrow D4 direction to illustrate). That is, if the movable component 82 will also move to Drawings above if the character 96 moves to Drawings above, and the character 96 moves to Drawings down, the movable component 82 will also move to Drawings down. At this time, it seems that the character 96 did the operation to the movable components 80, 82, and 84 from a game person etc. If a view is changed, when the movable components 80, 82, and 84 will move, it seems that the character 96 is moving, and it seems that the movable components 80, 82, and 84 did the operation to the character 96 in this case. Thus, the motion which interlocks mutually can be similarly applied in the relation between the character 96 and the movable components 80 and 84. In this case, in addition, it is good to perform linkage which the character 96 moved and mentioned above near either of the movable components 80, 82, and 84. If it carries out like this, as for all or a part of all or a part of movable components 80, 82, and 84, or movable components 80, 82, and 84, the character 96 seems to move the character 96 from a game person etc. Therefore, game persons come to see with interest.

[0041] If the fluctuation velocity of pattern fluctuation is gradually reduced as shown in [drawing 12 \(A\)](#), game persons can recognize visually signs that the pattern which constitutes a pattern group is moving (by a diagram, a dashed line shows a pattern). At this time, linkage with the character 96 and a movable component is still continuing, and signs that the character 96 has caught the movable component 84 are shown in the example of [drawing 12 \(A\)](#). And if the number of times n of linkage is set to 0 (YES of Step S90 of [drawing 8](#)). The movable components 80, 82, and 84 withdraw into an original position, and disappear so that it may change from [drawing 12 \(A\)](#) to [drawing 12 \(B\)](#) (Step S92 of [drawing 8](#)). The star map handle 98 and the character 96 concerned of the red which imitated the movable component 84 which the character 96 caught interlock and move within the viewing area of the special pattern display for indication 24 (Step S94 of [drawing 8](#)). Thus, since the process in which the movable component of a real object enters in the viewing area of the special pattern display for indication 24, and moreover changes to a pattern is novel, game persons who look at the process concerned are looking, and are interesting. Therefore, since production which interlocks the character 96 and the movable components 80, 82, and 84 within the viewing area of the special pattern display for indication 24, and is powerful can be performed, it can avoid boring a game person etc. further.

[0042] According to the above-mentioned embodiment, the effect taken below can be acquired.

(1) If it corresponds to Claim 1 and the main control substrate 100 (motion-control part) moves the movable components 80, 82, and 84 (two or more movable bodies). It is the interlocking change processing and [drawing 11](#) of ([drawing 8](#), and [drawing 12](#) as which a motion of the movable

components 80, 82, and 84 is interlocked with, and the display control board 200 (image control part) displays the character 96 (picture) in the viewing area of the special pattern display for indication 24 Reference] The movable components 80, 82, and 84 move within and without a viewing area, enter in a viewing area, or come out out of a viewing area. It seems from a game person etc. that a motion of the movable components 80, 82, and 84 is interlocked with at this time, and the character 96 moves. Game persons cannot know which movable component (movable body) will move among the movable components 80, 82, and 84. Therefore, since the character 96 moves according to a motion of the movable components 80, 82, and 84, it becomes powerful production, and the game person who looks at these is not bored further.

(2) So that it may correspond to Claim 2 and the motion of the character 96 and the motion of the movable components 80, 82, and 84 in the viewing area of the special pattern display for indication 24 may interlock, It is the interlocking change processing and drawing 11 of [drawing 8, and drawing 12 from which the display control board 200 moves the character 96, and the main control substrate 100 moves the movable components 80, 82, and 84 Reference] That is, the movable components 80, 82, and 84 are moved according to a motion of the character 96, or the character 96 is moved according to a motion of the movable components 80, 82, and 84. Therefore, linkage with the character 96 and the movable components 80, 82, and 84 serves as production which changes to Oshi more and is powerful, and does not bore further the game person who looks at these.

(3) When it corresponds to Claim 3 and the movable components 80, 82, and 84 enter in the viewing area of the special pattern display for indication 24, it is the interlocking change processing and drawing 11 of [drawing 8, and drawing 12 from which the display control board 200 moves the character 96, or the main control substrate 100 moves the movable components 80, 82, and 84 Reference] It is visible from a game person etc. in one side having done the operation to another side among the character 96 and the movable components 80, 82, and 84 at this time. Signs that exert an operation on the character 96 without substance from the movable components 80, 82, and 84 which have impossible substance actually by such control, or an operation is exerted on the movable components 80, 82, and 84 which have substance from the character 96 which does not have substance conversely can be directed. Therefore, linkage with the character 96 and the movable components 80, 82, and 84 serves as production which changes to Oshi more and is powerful, and does not bore further the game person who looks at these.

(4) So that it may correspond to Claim 4 and the motion of the movable components 80, 82, and 84 and the motion of the character 96 (pattern) in the viewing area of the special pattern display for indication 24 may interlock, It is the interlocking change processing and drawing 11 of [drawing 8, and drawing 12 from which the display control board 200 moves the character 96, and the main control substrate 100 moves the movable components 80, 82, and 84 Reference] The character 96 is moved according to a motion of the movable components 80, 82, and 84, or the movable components 80, 82, and 84 are moved according to a motion of the character 96. Therefore, since a motion of the character 96 and a motion of the movable components 80, 82, and 84 interlock and move, it becomes powerful production, and the game person who looks at these is not bored further. Since privileges, such as big hit games, are given as a big hit pattern is displayed on the special pattern display for indication 24 as a result, the game person can play a game, expecting the privilege concerned.

[0043][Other embodiments] In the pachinko machine 10 (game machine) mentioned above, it is not limited for the structure of other portions, form, a size, construction material, arrangement, and an operating condition to the above-mentioned embodiment. For example, each of following forms adapting the above-mentioned embodiment can also be carried out.

(1) According to the above-mentioned embodiment, this invention was applied to the pachinko machine 10. It can replace with this form and this invention can be similarly applied to what is other game machines (for example, a slot machine, a pachislot machine, a ball arranging machine, a mahjong ball game machine, a video game machine, etc.) other than a pachinko machine, and was

provided with a picture display part and two or more movable bodies. being concerned — others — since a picture changes according to a motion of a movable body even if it is a game machine, the game person who looks at a picture display part is not bored further.

[0044](2) According to the above-mentioned embodiment, the movable components 80, 82, and 84 which reciprocating movement was possible to the sliding direction, and imitated the star in it were applied as two or more movable bodies [refer to [drawing 2](#), [drawing 11](#), and [drawing 12](#)]. It may replace with this form and two or more movable components which can be rotated, respectively may be applied as two or more movable bodies. It explains referring to [drawing 13](#) for this example. It is what replaces the complex device 300 shown in [drawing 13](#) with the complex device 14 shown in [drawing 1](#), and is provided on the game board surface 12. The heavens prize port 302 equivalent to a general prize port. A picture. The number of the special pattern display for indication 312 which can be displayed, the movable component 306,308,310 which imitated the hammer in which the motion which is rotatable to a prescribed direction and enters in the viewing area of the special pattern display for indication 312 is possible, and the pachinko ball which usually passed through the gate 32 during change of a pattern. It has the reserved ball lamp 304 to display and reserved ball lamp which displays the number of pachinko ball which won a prize of 1st type start opening 30 or lower start opening 68 during change of special pattern 314 grade. It is possible for the movable component 308 to be constituted so that it may rotate from drivers, such as a solenoid which is not illustrated and a motor, through a torque transmission member to a sliding direction (arrow D6 direction to illustrate), and to enter in the variable region corresponding to middle figures. It is similarly constituted by the movable component 306,310 and it is possible to enter in each variable region corresponding to left figures and right figures.

[0045] In this composition, the movable component 306,308,310 is first positioned to the original position shown with a two-dot chain line. And when suspending the pattern fluctuation concerned after starting pattern fluctuation in three variable regions, as shown in [drawing 10 \(A\)](#), the movable component corresponding to the variable region which it is going to stop is swung down. This — swinging down — in order to make a game person etc. think that the movable component ***** (ed) actually struck the display screen, the pattern fluctuation of a corresponding variable region is suspended. In this way, the special pattern (left figures, middle figures, right figures; picture) displayed on the viewing area of the special pattern display for indication 24 can be changed. In order to make a game person etc. think that there was furthermore a shock, animation which continues swaying a special pattern and a background figure handle for a while is performed, or a crashing sound, a vibration sound, etc. are taken out from the loudspeaker 50. If it carries out like this, a more interesting display can be realized and presence will also increase. Thus, when the movable component 306,308,310 enters in the viewing area of the special pattern display for indication 24 and changes a special pattern, a background figure handle, etc., it becomes powerful production and can carry out by not boring a game person further.

[0046](3) According to the above-mentioned embodiment, the movable components 80, 82, and 84 which can move reciprocally were applied to the sliding direction as two or more movable bodies at the upper part side of the complex device 14 [refer to [drawing 2](#), [drawing 11](#), and [drawing 12](#)]. It may replace with this form and two or more movable components which can move reciprocally may be applied to a sliding direction as two or more movable bodies at the lower part side of a complex device. It explains referring to [drawing 14](#) for this example. It is what replaces the complex device 400 shown in [drawing 14](#) with the complex device 14 shown in [drawing 1](#), and is provided on the game board surface 12. The heavens prize port 402 equivalent to a general prize port. A picture. The number of the special pattern display for indication 406 which can be displayed, the movable component 408,410,412 which imitated the alligator in which the motion which is rotatable to a prescribed direction and enters in the viewing area of the special pattern display for indication 406 is possible, and the pachinko ball which usually passed through the gate 32 during change of a pattern. It has the reserved ball lamp 404 to display and reserved ball lamp which displays the

number of pachinko ball which won a prize of 1st type start opening 30 or lower start opening 68 during change of special pattern 414 grade. It is what ornamented by piercing a plate, and constitutes, and the movable component 410 goes in and out from the entrance 418 with which the complex device 400 was equipped. It is fixed to the rack 436 and this movable component 410 fixes to the axis of rotation of the motor 424 the pinion 430 which gears with that rack 436. The motor 424 replaces the motor 86 shown in drawing 3, and controls rotation by the main control substrate 100. Therefore, if rotation of the motor 424 is controlled from the main control substrate 100, movement magnitude, movement speed, etc. of the movable component 410 to a sliding direction (arrow D8 direction to illustrate) are controllable. It is similarly constituted by the movable component 408,412. That is, it is fixed to the rack 434,438, respectively, and goes in and out from the entrance 416,420, torque is transmitted through the pinion 428,432 fixed to the motor 422,426 axis of rotation, respectively, and it moves reciprocally to a sliding direction. The movable component 408,410,412 is also the same as when animals (for example, a raccoon dog, a fox, etc.) other than an alligator are imitated and applied.

[0047] Since the above-mentioned movable component 408,410,412 is the almost same composition, and it is easy, a motion which interlocks about an example of the movable component 410 is explained. The introduction movable component 410 is positioned to an original position shown by the movable component 408,412. And in order to pretend that the movable component 410 bites about a special pattern (middle figures; picture) stopped after starting pattern fluctuation in three variable regions, as shown in drawing 10 (A), or a special pattern which it is going to stop soon, the corresponding movable component 410 is moved upward. And after moving the movable component 410 to a position which seems to have bit middle figures, the movable component 410 and middle figures are moved downward at the almost same speed. At this time, it seems that the movable component 410 which imitated an alligator has pulled middle figures to a game person. In this way, a special pattern displayed on a viewing area of the special pattern display for indication 24 can be changed. Since it imitates an alligator (animal), when the movable component 410 is changed so that middle figures which are having bit in sight may be crushed, in addition, it is interesting. Thus, when the movable component 408,410,412 enters in a viewing area of the special pattern display for indication 24 and changes a special pattern, a background figure handle, etc., it becomes powerful production and can carry out by not boring a game person further.

[0048] Constituted the movable component 306,308,310 of the above (2), and the movable component 408,410,412 of (3) so that each might operate to a sliding direction, but. Even when it constitutes so that it may operate in the arbitrary directions like a longitudinal direction, an oblique direction, and a hand of cut or an operating direction is constituted so that a change is possible, the above-mentioned effect and same effect are acquired. It may interlock and move so that the movable component 306,308,310 and the movable component 408,410,412 may receive an operation in a target on the other hand by a picture of a special pattern displayed on the special pattern display for indication 24, or character 96 grade. For example, animation which strikes one of movable components by a picture displayed on the special pattern display for indication 24 is displayed. When it can be recognized as having seen from a game person etc. at this time, and having hit the movable component 306,308,310 and the movable component 408,410,412, that movable component 306,308,310 and movable component 408,410,412 are moved. In this way, since a mode to which a movable component moves to compensate for change of a picture is realized, a game person who looks at the special pattern display for indication 24 is not bored further.

[0049] (4) It is interlocking change processing and drawing 11 of [drawing 8, and drawing 12 which interlocked a motion of the character 96 and a motion of the movable components 80, 82, and 84 in the above-mentioned embodiment Reference] A motion of a background figure handle (ornament pattern) and a motion of the movable components 80, 82, and 84 may be interlocked. For example, if the display control board 200 changes scenery (for example, the sea, a mountain, a river, etc.) as a background figure handle, it will control so that the main control substrate 100 moves a movable

body of the movable components 80 and 82 and 84 grades with the change concerned. Even if it is such linkage, it becomes powerful production, and it can carry out by not boring a game person further.

[0050](5) According to the above-mentioned embodiment, the character 96 was applied as a picture or a pattern [refer to drawing 11 and drawing 12]. It may replace with this form and may apply as a picture or a pattern to what can be displayed on the special pattern display for indication 24 like the arbitrary patterns (a special pattern, a chance pattern, the Fig. 4 handle, an ornament pattern, etc.) displayed with the special pattern display for indication 24, a character, a sign, a mark and figures other than character 96, and an image. Since the movable components 80, 82, and 84 are interlocked with and it changes even if it is these pictures, the game person who looks at the special pattern display for indication 24 is not bored further. Although the special pattern display for indication 24 was applied as a picture display part, reference), the common pattern display 28, and other displays for indication may be applied for (drawing 2, drawing 11, drawing 12, etc. Even if it is these displays for indication, change of a picture and the motion of a movable component which are displayed on the display for indication concerned can be interlocked. Therefore, the game person who usually looks at the pattern display 28 and other displays for indication is not bored further. although the special pattern display for indication 24 all boiled mostly the viewing area into which the movable components 80, 82, and 84 enter and it was applied, it is good also considering (drawing 11, drawing 12, etc. as some viewing areas of reference) and the special pattern display for indication 24, and it is good also as a viewing area of other displays for indication. It is possible to apply not only to one viewing area but to two or more viewing areas. In this case, the character 96 displayed on the viewing area of another side as one side may be independently displayed as a motion of the movable components 80, 82, and 84, or may be interlocked with a motion of the movable components 80, 82, and 84, and may be displayed. Since linkage with the character 96 and the movable components 80, 82, and 84 will change to Oshi more if it carries out like this, the game person who looks at the special pattern display for indication 24 is not bored further. And although the character 96 was moved within the viewing area of the special pattern display for indication 24 or the picture was changed in the mode which suspends change of a pattern group, (drawing 11, drawing 12, etc. may change a picture in reference) and other modes. As other modes, there are a mode which forms, such as form of a picture, color, and a size, change, a mode which begins change of a pattern group from a stopped picture, etc. Since linkage with a picture and two or more movable bodies changes to Oshi more even if it is such a mode, the game person who looks at the special pattern display for indication 24 is not bored further.

[0051](6) It is interlocking change processing of Step S70 of (drawing 7, and drawing 8 in which linkage with the character 96 and the movable components 80, 82, and 84 was realized after reach in the above-mentioned embodiment Reference) change of a pattern group which is replaced with this form (or — adding) and is performed before reach. If necessary timing is reached about all the modes which can be displayed with the special pattern display for indication 24 like animation displays (ornament pattern etc.) in a probability variation and big hit games, it may constitute so that linkage with a picture and two or more movable components may be performed. For example, in change of a pattern group performed before reach, if probability which becomes reach increases, a picture and two or more movable components will be interlocked. Since linkage with a picture and two or more movable components will change to Oshi more if it carries out like this, a game person who looks at the special pattern display for indication 24 is not bored further. The game person can play a game with a hope which becomes reach, a probability variation, etc.

[0052](7) According to the above-mentioned embodiment, the special pattern display for indication 24 which makes light emit (coloring) and displays a picture was applied as a picture display part. It can replace with this form and mechanical displays for indication, such as a drum display which displays the picture expressed with the display surface, can also be applied as a picture display part. For example, a drum display has 1 or two or more solids of revolution, arranges two or more pictures

on the surface (namely, display surface) of the solid of revolution appropriately, and expresses them with it. In this way, the part where a game person can recognize the picture expressed with the solid of revolution is equivalent to a viewing area. And change of a pattern group, etc. are realized by carrying out the roll control of the solid of revolution for positive rotation, counterrotation, reciprocal rotation, revolving speed, etc. with drivers, such as a motor. If according to this composition you make it a motion of a movable component interlocked with and the roll control of a solid of revolution is performed, the picture in a viewing area can be changed. Therefore, the game person who looks at a picture display part is not bored.

[0053](8) According to the above-mentioned embodiment, it interlocked and the motion which takes down the movable components 80, 82, and 84 as a reach advance notice, and is retracted immediately was performed [refer to Step S60 of [drawing 7](#), [drawing 10 \(A\)](#), and [drawing 10 \(B\)](#)]. When warning about the re change of not only a reach advance notice but a single pattern, the re change of a complete diagram handle, great success, a probability variation, etc. (information), the movable components 80, 82, and 84 may be interlocked. For example, the form shown below is realizable. (8a) When it applies to the example shown in [drawing 10](#) – [drawing 12](#) about the case where the re change of a single pattern is announced beforehand, be as follows. That is, if the left figures 90 currently changed tend to stop soon, when the movable component 80 will enter in the viewing area of the special pattern display for indication 24 and the left figures 90 will stop after that, the movable component 80 withdraws henceforth. This operation is similarly performed about the relation between the right figures 94 and the movable component 84. Then, if the left figures 90 and the right figures 94 become reach in a predetermined combination (for example, pattern “77”), change of the middle figures 92 will become slowly gradually. It withdraws, if the movable component 82 moves up and down and the middle figures 92 changed slowly enter in the viewing area of the special pattern display for indication 24 according to the motion at the time of passing through a center section mostly of the special pattern display for indication 24 at this time. That is, the motion by the special pattern and a movable component is interlocked. And a re change will be started, if the movable component 82 enters in the viewing area of the special pattern display for indication 24 when the left figures 90, the middle figures 92, and the right figures 94 separate and it stops in a pattern (for example, pattern “767”). It will become more powerful production, if the middle figures 92 changed slowly are interlocked with, the movable component 82 is moved and a re change is announced beforehand. On the other hand, the game person who looked at the motion of the middle figures 92 can predict a re change, and the hope which acquires a privilege increases. If the movable component 408,410,412 grade which imitated the alligator shown in [drawing 14](#) is used, presence will increase more. (8b) About the case where the re change of a single pattern is announced beforehand, it may carry out as follows. That is, when the left figures 90 and the right figures 94 do not become reach in a predetermined combination in the case of the above (8a) (for example, pattern “75”), at least one side of the movable component 80 and the movable component 84 is made to enter in the viewing area of the special pattern display for indication 24. Then, while retracting the movable component made to enter, a re change is started about the pattern corresponding to the movable component concerned. It will become more powerful production, if linkage that a movable component appears and a re change starts is performed even if it does not reach reach. The hope from which the game person who looked at this mode acquires a privilege increases. (8c) When it applies to the example shown in [drawing 10](#) – [drawing 12](#) about the case where the re change of a complete diagram handle is announced beforehand, be as follows. That is, when the left figures 90, the middle figures 92, and the right figures 94 stop by a big hit pattern (for example, pattern “666”) after starting change of a pattern group, the movable components 80, 82, and 84 are taken down to the state which shows in [drawing 10 \(B\)](#) almost all at once (or individually). Then, while retracting the movable components 80, 82, and 84 in the state which shows in [drawing 10 \(A\)](#), complete diagram handle change changed while synchronizing the left figures 90, the middle figures 92, and the right figures 94 is started. In this case, about the left figures 90, the

middle figures 92, and the right figures 94, it may be almost simultaneous and the timing of a fluctuation start may be changed. As an example which changes the timing of a fluctuation start, if about 1 round is taken, it is begun for it to be begun first to change the left figures 90, and to change the middle figures 92, it is begun further to change the middle figures 92, and if about 1 round is taken, it is begun to change the right figures 94. If it carries out by switching the timing of a fluctuation start, a varying mode will be diversified and enjoyment will increase.

[0054](9) It is interlocking change processing of Step S70 of drawing 7, and drawing 8 in which the character 96 (picture) and the movable components 80, 82, and 84 (movable body) were interlocked regardless of an expectation degree (reliability, probability of great success) which expresses the ease of becoming with the above-mentioned embodiment to great success Reference) it may replace with this form (or — adding), and may relate to an expectation degree, and the character 96 and the movable components 80, 82, and 84 may be interlocked. For example, an expectation degree when not appearing at all is made into 0% about the movable components 80, 82, and 84, an expectation degree in case any one appears is made into 30%, an expectation degree in case any two appear is made into 60%, and an expectation degree when appearing altogether is made into 90%. Or make an expectation degree in case the movable component 80 appears into 10%, and an expectation degree in case the movable component 82 appears is made into 30%. It is good also considering values (for example, four operations, a function operation, etc.) which calculated an expectation degree concerning a movable component which made 50% an expectation degree in case the movable component 84 appears, and actually appeared as a final expectation degree. The game person who looked at a movable component which enters in a viewing area of the special pattern display for indication 24 can guess an expectation degree, and a hope which expects a privilege increases. This is applicable to the characters 96 (namely, a kind, the number, etc.) and other pictures of the other side to interlock (for example, a special pattern, an ornament pattern, etc.) similarly. When warning also about a re change of reach or a single pattern, a re change of a complete diagram handle, great success, and a probability variation (information), it can apply similarly to a case where the character 96 and the movable components 80, 82, and 84 are interlocked. In these cases, even if it is, the game person can guess an expectation degree and a hope which expects a privilege increases.

[0055](10) In addition, if it has any one functions, such as a function to change the color of the movable components 80 and 82 and 84 (movable body) self, a function (display for indication) which displays a pattern, a function (photogen) which can be turned on, the mode of operation of the movable components 80, 82, and 84 can be diversified more. If how to move the movable components 80, 82, and 84 according to an expectation degree, color, the contents of the pattern, the state of lighting/putting out lights, etc. are changed, the game person who looked at the state of the movable components 80, 82, and 84 can guess an expectation degree more exactly, and the hope which expects a privilege will increase further.

[Translation done.]

* NOTICES *

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1.This document has been translated by computer. So the translation may not reflect the original precisely.

2.*** shows the word which can not be translated.

3.In the drawings, any words are not translated.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is a front view showing the appearance of the 1st sort pachinko machine.

[Drawing 2] The sectional view of an A-A line [in / for the enlarged drawing showing the appearance of a complex device / (A)] is shown in (B) at (A), respectively.

[Drawing 3] It is a block diagram showing the outline composition of a main control substrate and a display control board.

[Drawing 4] It is a flow chart which shows the 1st type start opening processing.

[Drawing 5] It is a flow chart which shows pattern fluctuation processing.

[Drawing 6] It is a flow chart which shows fluctuation displaying processing.

[Drawing 7] It is a flow chart which shows reach processing.

[Drawing 8] It is a flow chart which shows interlocking change processing.

[Drawing 9] It is a flow chart which shows picture display processing.

[Drawing 10] It is a figure showing the interlocking example of a picture and two or more movable bodies.

[Drawing 11] It is a figure showing the interlocking example of a picture and two or more movable bodies.

[Drawing 12] It is a figure showing the interlocking example of a picture and two or more movable bodies.

[Drawing 13] It is an enlarged drawing showing the appearance of other complex devices.

[Drawing 14] It is an enlarged drawing showing the appearance of other complex devices.

[Explanations of letters or numerals]

10 Pachinko machine (game machine)

14 Complex device

20 and 22 Reserved ball lamp

24 Special pattern display for indication (picture display part)

30 The 1st type start opening

34 Big prize port

60 and 66 Start opening sensor

68 Lower start opening

80, 82, and 84 Movable component (two or more movable bodies)

86 Motor (driver)

96 Character (picture)

98 Star map handle (picture which imitated the movable body)

100 Main control substrate (a motion-control part, a game control part)

110,210 CPU

112,202 ROM

114,204 RAM

200 Display control board (image control part)
212 Character generator
214 VDP

[Translation done.]

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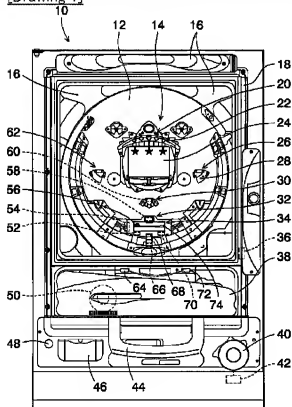
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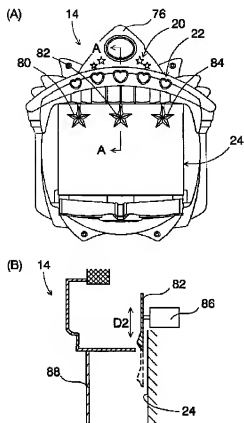
3.In the drawings, any words are not translated.

DRAWINGS

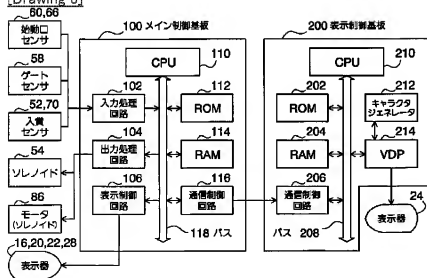
[Drawing 1]



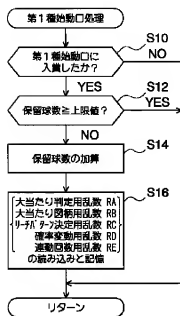
[Drawing 2]



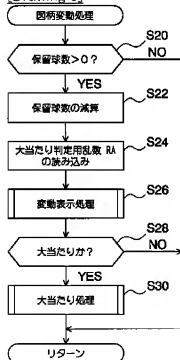
[Drawing 3]



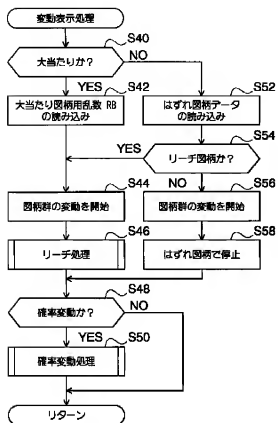
[Drawing 4]



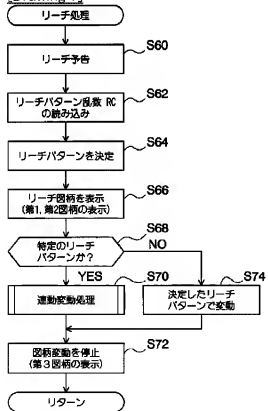
[Drawing 5]



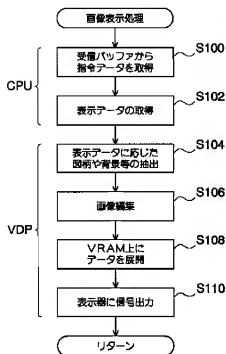
[Drawing 6]



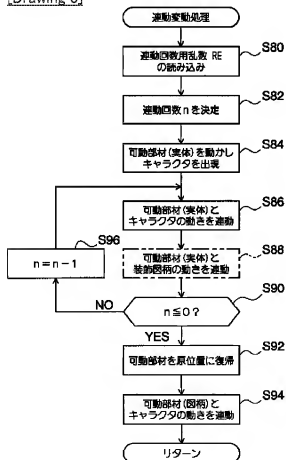
[Drawing 7]



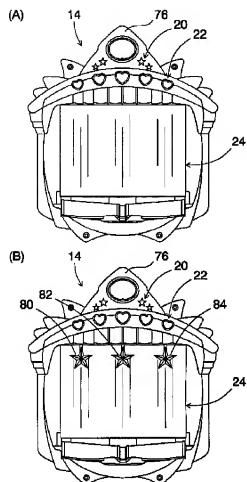
[Drawing 9]



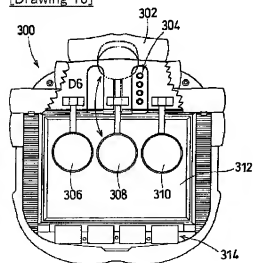
[Drawing 8]



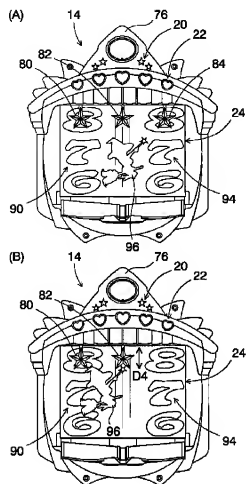
[Drawing 10]



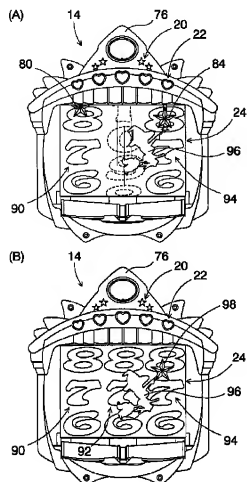
[Drawing 13]



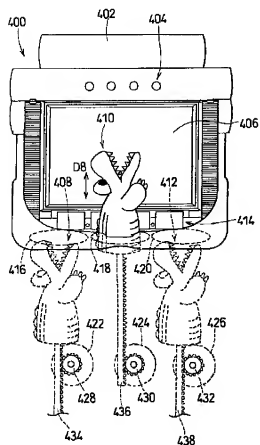
[Drawing 11]



[Drawing 12]



[Drawing 14]



[Translation done.]

(51)Int.Cl. ⁷	識別記号	F I	アコード(参考)
A 6 3 F 7/02	3 2 0	A 6 3 F 7/02	3 2 0 2 C 0 8 8

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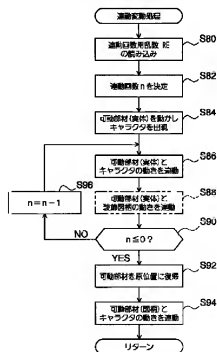
Fターム(参考) 2C08 EB55 EB78

(54)【発明の名称】 遊技機

(57)【要約】

【課題】 画像と複数の可動体とを表示領域内で連動させて迫力のある演出を行うことにより、遊技者をさらに飽きさせないようにする。

【解決手段】 パチンコ機等の遊技機に関し、リーチ(所要のタイミング)に達すると、複数の可動部材(可動体)を動かして画像表示部の表示領域内に入り込ませるとともに、画像表示部にキャラクタ(画像)を出現させる(ステップS84)。その後、連動回数nの範囲内でキャラクタと複数の可動部材とを連動して動かす(ステップS86、S90)。すなわち、キャラクタの動きに合わせて複数の可動部材の全部または一部を動かしたり、あるいは複数の可動部材の全部または一部の動きに合わせてキャラクタを動かす。こうすることによって、キャラクタと複数の可動部材とが連動して動くので迫力のある演出となり、これらを見る遊技者をさらに飽きさせない。



【特許請求の範囲】

【請求項1】 画像を表示可能な表示領域を有する画像表示部と、前記画像の表示を制御する画像制御部と、少なくとも前記表示領域内に入り込む動きが可能な複数の可動体と、前記複数の可動体の動きを制御する動作制御部とを備え、

前記動作制御部が前記複数の可動体を動かすと、前記複数の可動体の動きに連動して前記画像制御部が前記表示領域に画像を表示する遊技機。

【請求項2】 画像を表示可能な表示領域を有する画像表示部と、前記画像の表示を制御する画像制御部と、少なくとも前記表示領域内に入り込む動きが可能な複数の可動体と、前記複数の可動体の動きを制御する動作制御部とを備え、

前記画像の変化と前記複数の可動体の動きとが連動するように、前記画像制御部が前記画像を変化させ、前記動作制御部が前記複数の可動体を動かす遊技機。

【請求項3】 請求項1または2に記載した遊技機において、表示領域内に複数の可動体が入り込むと、画像および前記複数の可動体のうち一方が他方に対して作用を及ぼしたと見えるように画像制御部が前記画像を変化させおよび、または動作制御部が前記複数の可動体を動かす遊技機。

【請求項4】 請求項1から3のいずれか一項に記載した遊技機において、図柄の表示を制御する画像制御部と、結果として画像表示部に特定図柄が表示されると遊技者に特典を与える遊技制御部とを備え、図柄の変化と複数の可動体の動きとが連動するように、前記画像制御部が図柄を変化させ、前記動作制御部が複数の可動体を動かす遊技機。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】 本発明は、画像表示部と複数の可動体とを備えた遊技機に関する。

【0002】

【従来の技術】 遊技機の一つであるパチンコ機では、パチンコ球が所定領域（例えばゲートや始動口等）に入賞したり通過すると、画像表示器において複数の変動領域でそれぞれ図柄群を変動させ始める。このような図柄群の変動状態を「図柄変動」と呼ぶ。そして、図柄変動を始めてからしばらくした後に図柄群の変動を停止し、結果として画像表示器に特定図柄が表示されると遊技者に特典を与える。

【0003】ところで、図柄群の変動と停止による演出

のみでは表示が単調になってしまうため、例えば特開平8-249204号公報や特開平8-141161号公報において所定位置に設けた可動体が画像に合わせて回転する技術を開示した。この技術によれば画像の変化に可動体の動きも加わるが、可動体が画像に対して積極的に働きかけることもなく、逆に画像が可動体に対して積極的に働きかけることもない。よって、少し見慣れた遊技者は画像と可動体の連動にも飽きてしまう。そこで本出願の出願人は、特願平11-200896号（未公開）において実体のある可動体と実体のない画像とが表示領域内で連動する演出を行う技術を開示した。この技術によれば可動体の動きに合わせて画像が変化し、あるいは画像の変化に合わせて可動体が動く。よって、可動体と画像とを見る遊技者をより飽きさせなくすることができた。

【0004】

【発明が解決しようとする課題】 しかし、特願平11-200896号に開示した技術では可動体をつだけ設けただけに過ぎない。そのため、画像と可動体との連動による演出を行なったとしても、実体として動くのは一の可動体にすぎず迫力が欠けていた。本発明はこのような点に鑑みてなされたものであり、画像と複数の可動体とを表示領域内で連動させて迫力のある演出を行うことにより、遊技者をさらに飽きさせないようにすることを目的とする。

【0005】

【課題を解決するための手段1】 課題を解決するための手段1は、請求項1に記載した通りである。ここで、請求項1に記載した用語については以下のように解釈する。当該解釈は他の請求項および発明の詳細に説明についても同様である。

(1) 「画像」には、特別図柄、普通図柄、裝飾図柄等のような図柄に限らず、文字（英数字や漢字等）、記号、符号、図形（キャラクタ等を含む）、映像などのように画像表示部に表示可能なすべてのものを含む。また、画像は静止画でもよく、アニメーション等の動画でもよい。

(2) 「表示領域」には、画像表示部で表示可能な領域の全部に限らず、当該領域の一部をも含む。

(3) 「画像表示部」は一の表示器（表示装置）としてもよく、複数の表示器で構成してもよい。複数の表示器で構成した場合の「表示領域」は、各表示器の表示領域の全部または一部からなる。

(4) 「表示領域内に入り込む動き」としては、遊技機の正面から見て表示領域上に重なるように可動体が入り込むような動作に限らず、画像表示部の外周から動いてきた可動体が表示領域内で当該可動体を模した画像に変化して入り込むような動作をも含む。「少なくとも表示領域内に入り込む動き」とは表示領域内に入り込む動きだけでなく、表示領域内での動きや、表示領域内から出

る動きなどを任意に含める趣旨である。

(5) 「複数の可動体」を動かす場合には、少なくとも二つの可動体をほぼ同時に動かしてもよく、一の可動体を動かした後に他の可動体を動かしてもよく、結果的に複数の可動体が動く全ての態様を含む。また、ほぼ同時に複数の可動体を表示領域内に入り込むように動かしてもよく、異なるタイミングで一の可動体ごとに表示領域内に入り込むように動かしてもよい。

【0006】当該手段1によれば、動作制御部が複数の可動体を動かすと、当該複数の可動体の動きに連動して画像制御部が表示領域に画像を表示する。このとき複数の可動体は表示領域内外で動いたり、表示領域内に入り込んだり、あるいは表示領域内から出たりする。このとき遊技者等からは、複数の可動体の動きに連動して画像が変化してゆくように見える。また、複数の可動体のうちの可動体が動くのかを遊技者等は知り得ない。よって、複数の可動体の動きに合わせて画像が変化して迫力のある演出となり、これらを見る遊技者をさらに飽きさせない。

【0007】

【課題を解決するための手段2】課題を解決するための手段2は、請求項2に記載した通りである。ここで、請求項2に記載した用語の「画像を変化させる」には、画像の形状、色彩、大きさ、表示位置等の形態が変わる態様に限らず、図柄群の変動を停止する態様や、停止している画像から図柄群の変動を始める態様をも含む。当該解釈は他の請求項および発明の詳細な説明についても同様である。

【0008】当該手段2によれば、表示領域内における画像の変化と複数の可動体の動きとが連動するように、画像制御部が画像を変化させ、動作制御部が複数の可動体を動かす。すなわち、画像の変化に合わせて複数の可動体を動かし、あるいは複数の可動体の動きに合わせて画像を変化させる。このとき、複数の可動体のうちの可動体が動くのかを遊技者等は知り得ない。よって、画像と複数の可動体との連動がより多様に変化して迫力のある演出となり、これらを見る遊技者をさらに飽きさせない。

【0009】

【課題を解決するための手段3】課題を解決するための手段3は、請求項3に記載した通りである。ここで、請求項3に記載した用語の「作用」とは、打つ（叩く）、押す、引っ張る、上げ下げる、落とす等のように動きを伴うような作用である。当該解釈は他の請求項および発明の詳細な説明についても同様である。

【0010】当該手段3によれば、表示領域内に複数の可動体が入り込むと、画像制御部が画像を変化させたり、動作制御部が複数の可動体を動かす。当該画像の変化や可動体の動きは、画像および複数の可動体のうち一方が他方に対して作用を及ぼしたと見えるようになる。

こうした制御により実際にはあり得ない実体のある複数の可動体から実体のない画像に作用を及ぼしたり、あるいは実体のない画像から実体のある複数の可動体に作用を及ぼす様子を演出することができる。よって、画像と複数の可動体との連動がより多様に変化して迫力のある演出となり、これらを見る遊技者をさらに飽きさせない。

【0011】

【課題を解決するための手段4】課題を解決するための手段4は、請求項4に記載した通りである。ここで、請求項4に記載した用語の「図柄を変化させる」には「画像を変化させる」と同様に、図柄の形状、色彩、大きさ、表示位置等の形態が変わる態様に限らず、図柄群の変動を停止する態様や、停止している図柄から図柄群の変動を始める態様をも含む。当該解釈は他の請求項および発明の詳細な説明についても同様である。

【0012】当該手段4によれば、表示領域内における図柄の変化と複数の可動体の動きとが連動するように、画像制御部が図柄を変化させ、動作制御部が複数の可動体を動かす。すなわち、複数の可動体の動きに合わせて図柄が変化し、あるいは図柄の変化に合わせて複数の可動体が動く。よって、複数の可動体の動きと図柄の変化とが連動して動くので迫力のある演出となり、これらを見る遊技者をさらに飽きさせない。また、結果として画像表示部にて特定図柄が表示されると特典が与えられるので、遊技者は特典を期待しながら遊技することができる。

【0013】

【発明の実施の形態】以下、本発明における実施の形態を図面に基いて説明する。本実施の形態は複数の可動体を備えたパチンコ機に本発明を適用した例であって、図1～図12を参照しながら説明する。

【0014】図1には第1種パチンコ機であるパチンコ機10の外観を正面図で示す。図1に示すパチンコ機10の遊技盤面12上には、通過するパチンコ球を検出するゲートセンサ58を有するゲート32、パチンコ球が通過可能な通過口26、62、入賞したパチンコ球を検出する始動口センサ60を有する第1種始動口30、ソレノイド54によって開閉される蓋74を有する大入賞口34、後述する特別図柄表示器24や保留ランプ20、22等を複合的に有する複合装置14、その他に一般の入賞口や風車、釘などが適宜に配置されている。また遊技盤面12の下方には、遊技者がパチンコ機10に対して操作を行う操作ボタン48（操作部）、賞球を含むパチンコ球を一時的に貯留する下皿44や、タバコの吸い殻等を入れる灰皿46、遊技者の手が触れてはか否かを検出するタッチセンサ42を備えたハンドル40、賞球の受皿である皿38の内部に設けて音（効果音や音楽等）を出すスピーカ50などを備える。また、ガラス枠18（他に「金枠」とも呼ぶ。）の開放を検出

する待開放センサ36や、パチンコ機10の遊技内容等に合わせて適切な位置に配置されている発光体からなるランプ類16をも備える。さらに上皿38には球貸を指令する球貸スイッチ64や、プリペイドカードの返却を指令する返却スイッチ72等を備える。

【0015】遊技盤面12上に配置された通過口26には、普通図柄を変動または停止して表示する普通図柄表示器28を備える。普通図柄表示器28は一個または複数個の発光体（例えば緑色、赤色、橙色等の複数色で発光可能なLED）を有し、ゲート32にパチンコ球が通過したときに変動が始まって所定時間経過後に停止する。具体的には発光体を点滅させて変動を行い、特定の発光体が特定の色で点灯（あるいは消灯）する状態で停止すると下部始動口68の蓋を一定期間（例えば4秒間）だけ開ける。大入賞口34は上記蓋74の他に、パチンコ球が大入賞口開放期間（例えば20秒間）内に入賞すると大当たり遊技状態を所要のラウンド数（例えば16ラウンド）内で継続可能になるVゾーン56や、単に賞球を払い出す普通入賞口をも有する。入賞したパチンコ球を検出するために、Vゾーン56にはVゾーンセンサ52を、上記普通入賞口には入賞センサ70をそれぞれ有する。大入賞口34の下方には、入賞したパチンコ球を検出する始動口センサ66を備えた下部始動口68を設ける。当該下部始動口68は第1種始動口30と同様の機能を備え、いずれもパチンコ球が入賞すると通常の入賞口と同様に賞球を払い出す。

【0016】図2（A）に拡大して示す複合装置14は、一般の入賞口に相当する天入賞口76や、画像を表示可能な特別図柄表示器24、所定方向（例えば上下方向）に移動可能であって特別図柄表示器24の表示領域内に入り込む動きが可能な可動部材80、82、84、普通図柄の変動中にゲート32を通過したパチンコ球の個数を表示する保留球ランプ20、特別図柄の変動中に第1種始動口30または下部始動口68に入賞したパチンコ球（すなわち保留球）の個数を表示する保留球ランプ22等を有する。以下、保留球ランプ22の表示によって認識できる保留球の個数を「保留球数」と呼ぶ。画像表示部に相当する特別図柄表示器24は例えば液晶表示器を用い、特別図柄に限らず、文字、記号、符号、図形、映像などを表示する。特別図柄表示器24に表示する特別図柄は、第1種始動口30や下部始動口68にパチンコ球が入賞すると変動し始め、所定時間を経過すると停止する。当該停止には完全に停止させる態様のみならず、所定方向に所定範囲で復して動く状態を表示する態様も含む。例えば、図柄がわずかに上下方向に揺れ動く状態も停止に含む。なお、特別図柄表示器24にはCRTやLED表示器、プラズマ表示器などのように図柄が表示可能な如何なる表示器を用いてもよい。また、普通図柄表示器28と特別図柄表示器24とを別個に用いたが、同一の表示器で双方を兼用してもよい。保

留球ランプ20、22は、各々が1個または複数個の発光体（例えば4個のLED）からなる。

【0017】図2（B）に示すように、星を模した可動部材82はモータ86によって上下方向（図示する矢印D2方向）に移動可能に構成されている。可動部材82とモータ86との間にはギア歯、ベルト、チェーン、ラック&ピニオン、トルクコンバータ等のようなトルク伝達部材（図示せず）を介在させており、モータ86の駆動で発生した回転運動をトルク伝達部材によって進運動に変換して可動部材82に伝達する。こうして可動部材82は該図面の上下方向に移動可能になる。このことは可動部材80、84についてもほぼ同様に構成することによって、可動部材80、82、84は互いに独立して上下方向に進運動することができ、なお、可動部材80は例えば黄色に、可動部材82は例えば青色に、可動部材84は例えば赤色にそれぞれ着色されている。また、遊技者等が直接に可動部材80、82、84や特別図柄表示器24に触れないように、特別図柄表示器24の前面側（図2（B）の例では左側）にはカバー体88が設けられている。

【0018】次に、パチンコ機10によるパチンコ遊技を実現するメイン制御基板100（動作制御部、遊技制御部）と、当該メイン制御基板100から送られた表示指令を受けて特別図柄表示器24に画像を表示する表示制御基板200（画像制御部）とについて、これらの概略構成を示した図3を参照しながら説明する。これらのメイン制御基板100および表示制御基板200は例えばパチンコ機10の背面側に設ける。図3に示すメイン制御基板100はCPU（プロセッサ）110を中心に構成し、遊技制御プログラムや所要の遊技データ（例えば大当たり値等）を格納するROM112、各種の乱数、データ、入出力信号等を格納するRAM114、各種の入力装置から送られた信号を受けてメイン制御基板100内で処理可能なデータ形式に変換する入力処理回路102、CPU110から送られた作動データを受けて各種の出力装置を作動させる出力処理回路104、CPU110から送られた表示データを受けて各種の発光体を適宜に表示（点灯・消灯を含む）する表示制御回路106、表示制御基板200に対して所要のデータを送信する通信制御回路116等を有する。これらの構成要素は、いずれもバス118にないに結合されている。

【0019】CPU110はROM112に格納された遊技制御プログラムを実行してパチンコ機10による遊技を実現するが、当該遊技制御プログラムには後述する第1種始動口処理等を実現するためのプログラムをも含む。ROM112にはEPROMを用い、RAM114にはDRAMを用いるが、他の種類のメモリを用いてもよい。当該他の種類のメモリとしては、EEPROM、SRAM、フラッシュメモリ等がある。入力処理回路102が信号を受ける入力装置としては、例えば始動口セ

ンサ60、ゲートセンサ58、入賞センサ（Vゾーンセンサ52等）あるいは他のセンサ（タッチセンサ42、枠開放センサ36等）などがある。出力処理回路104が信号を出力する出力装置としては、例えばソレノイド54等がある。表示制御回路106が表示する発光体としては、例えばランプ類16や保留球ランプ20、22、あるいは普通図柄表示器28等がある。通信制御回路116は、必要に応じてさらに図示しない制御基板やホールコンピュータ等に対しても所要のデータを送信することができる。

【0020】次に、表示制御基板200はCPU210を中心に構成し、表示制御プログラムや所要の表示データ（例えば表示指令に対応する表示情報や複数の変動パターン等）を格納するROM202、表示指令、表示情報、入出力信号等を格納するRAM204、メイン制御基板100から送信されたデータを受信する通信制御回路206、所要の画像を生成するキャラクタジェネレータ212、CPU210から送られた表示情報を受けて特別図柄表示器24に対して画像を加えて表示するVDP（Video Display Processor）214等を有する。これらの構成要素は、いずれもバス208に互いに結合されている。

【0021】CPU210はROM202に格納された表示制御プログラムを実行して特別図柄表示器24に画像を表示するが、当該表示制御プログラムには後述する画像表示処理等を実現するためのプログラムをも含む。ROM202にはEPROMを用い、RAM204にはDRAMを用いるが、他の種類のメモリを用いてもよい。当該他の種類のメモリとしては、EEPROM、SRAM、フラッシュメモリ等がある。通信制御回路206は、必要に応じてさらに図示しない制御基板やホールコンピュータ等に対しても所要のデータを送信することができる。キャラクタジェネレータ212が生成する画像としては、例えば文字、図柄、アニメーション等の動画、静止画、映像などがある。VRAMやバレットRAM等を有するVDP214は、表示情報に対応する文字、図柄、背景等のデータをキャラクタジェネレータ212で生成して読み込み、配色指定及びスプライト処理等の画像編集を行なってVRAMやバレットRAMにデータ展開した上で、最終的に映像信号や同期信号等を特別図柄表示器24に出力する。このときスプライト処理を実行して実現されるスプライト機能によって、複数の図柄群を同時にまたは非同時に変動または停止して表示する処理を高速に実行することができる。

【0022】上記のように構成したパチンコ機10において、本発明を実現するためにメイン制御基板100や表示制御基板200で行う処理手順について図4～図9を参照して説明する。ここで、図4には第1種始動口30に対するパチンコ球の入賞判別を実現する第1種始動口処理の内容を、図5には特別図柄表示器24に図柄群

を変動または停止する表示を実現する図柄変動処理の内容を、図6には図柄群を変動し始めてから停止するまでの表示を実現する変動表示処理の内容を、図7には、リーチ表示およびリーチパターンに基づく変動を実現するリーチ処理の内容を、図8には可動部材80、82、84の動きと特別図柄表示器24に表示する真像との連動（同期、同調）を実現する連動変動処理の内容を、図9にはメイン制御基板100から送られた表示指令を受けた表示制御基板200が画像編集を行なって特別図柄表示器24に真像を表示する画像表示処理の内容をそれぞれフローチャートで示す。これらの処理のうち、第1種始動口処理、図柄変動処理、変動表示処理、リーチ処理、連動変動処理は、いずれも図3に示すメイン制御基板100においてROM112に格納されている遊技制御プログラムをCPU110が適当なタイミング（例えば4ミリ秒ごとの周期）で実行して実現する。また、画像表示処理は表示制御基板200においてCPU210とVDP214が適当なタイミングでプログラムを実行して実現する。

【0023】ここで、以下の説明において「加算する」とは通常は1だけ保留球数を増やすことを意味するが、遊技状態等に応じて適宜に2以上ずつ増やす場合を含む。これに対して「減算する」とは、保留球数を減らす点を除いて加算する場合と同様である。また、第1種始動口30と下部始動口68とは同様に機能するので、説明を簡単にするために第1種始動口30を例にして説明する。さらに、特別図柄表示器24で行う図柄群の変動または停止には、左側、中間、右側の三つの変動領域を区画してそれぞれ図柄群を変動し、左側の変動領域に左図柄を、中間の変動領域に中図柄を、右側の変動領域に右図柄を停止する態様を適用する。

【0024】図4に示す第1種始動口処理では、まず第1種始動口30にパチンコ球が入賞したか否かを判別する（ステップS10）。具体的には、図1、図3において始動口センサ60から検出信号を受けると入賞した（YES）と判別し、当該検出信号を受けなければ入賞していない（NO）と判別する。もし、第1種始動口30にパチンコ球が入賞すると、保留球数が上限値（例えば4）に達したか否かを判別する（ステップS12）。保留球数が上限値に達していなければ（NO）、その保留球数を加算する（ステップS14）。加算した保留球数に応じて保留球ランプ22のLEDを点灯する。その後、各種乱数を読み込んで記憶し（ステップS16）、第1種始動口処理を終了する。なお、第1種始動口30にパチンコ球が入賞していない場合（ステップS10のNO）や、保留球数が上限値に達した場合（ステップS12のYES）には、そのまま第1種始動口処理を終了する。

【0025】上記ステップS16で読み込んでRAM114に記憶する各種乱数には、当たりか否かの判別に

用いる大当たり判定用乱数R Aや、大当たり判定用乱数R Aによって大当たりと判別された場合において特別図柄表示器24に停止して表示する大当たり図柄(特定図柄の組み合わせ)を特定するために用いる大当たり図柄用乱数R B、特別図柄表示器24に表示されたリーチ図柄(所定図柄の組み合わせ)等に応じてリーチに達してから変動を停止するまでの表示パターンを特定するために用いるリーチパターン用乱数R C、大当たりになった後に大当たりになる確率を変更するか否かを判別するために用いる確率変動用乱数R D、可動部材80、82、84等の運動回数nを決定するために用いる作動回数用乱数R Eなどがある。「リーチ」または「リーチ状態」とは、未だに変動している残りの特別図柄を除き、他の特別図柄がリーチ図柄と一致している状態を意味する。

【0026】図5に示す図柄変動処理では、まず保留球数が正数(すなわち保留球数>0を満たす)か否かを判別する(ステップS20)。もし、保留球数が0または負数のときは(YES)、そのまま図柄変動処理を終了する。一方、保留球数が正数のときは(YES)、次回以降の処理に備えて保留球数を減算し(ステップS22)、減算した保留球数に応じて保留球ランプ22のLEDを点灯する。そして、図4のステップS16で記憶した大当たり判定用乱数R Aを読み込み(ステップS24)、変動表示処理を実行する(ステップS28)。変動表示処理の具体的な内容について、図6を参照しながら説明する。

【0027】図6に示す変動表示処理では、まず「大当たり」か否かを判別する(ステップS40)。具体的には、図5のステップS24で読み込んだ大当たり判定用乱数R Aが大当たり値と一致するか否かによって判別する。大当たり値は1個または複数個であるが、遊技状態(例えば確率変動)等が変わると大当たり値の個数を変化させてもよい。もし「大当たり」と判別されたときは(YES)、図4のステップS16で記憶した大当たり図柄用乱数R Bを読み込み(ステップS42)、当該大当たり図柄用乱数R Bの値に基づいて最終的に停止して確定する予定の図柄(以下「停止予定図柄」と呼ぶ。)を決定し、図柄群を変動させ始めるべく後述するステップS44に進む。一方、ステップS40で「はずれ」と判別されたときは(NO)、はずれ図柄を特別図柄表示器24に表示するためにはずれ図柄データをRAM114から読み込んだ後(ステップS52)、当該はずれ図柄にリーチ図柄を含むか否かを判別する(ステップS54)。リーチ図柄は例えば左図柄と右図柄の組み合わせが該当し、通常のパンチン機10では同じ図柄(いわゆる「ゼロ目」)である。もしリーチ図柄を含むならば(YES)、最終的には「はずれ」になるが途中でリーチに達するので後述するステップS44に進む。一方、リーチ図柄を含まなければ(NO)、ステップS44と同様に図柄群を変動し始め(ステップS56)、所定の変動パ

ターンに基づいて変動を行なった後にははずれ図柄で停止し(ステップS58)、後述するステップS48に進む。上記ステップS56、S58ではそれぞれ対応する表示指令を表示制御基板200に送って実現する。

【0028】表示制御基板200に表示指令を送って図柄群を変動し始めた後(ステップS44)、リーチ処理を実行する(ステップS46)。表示制御基板200で行われる処理については後述することとし、まずリーチ処理の具体的な内容について図7を参照しながら説明する。図7に示すリーチ処理では、まず遊技者等にリーチ予告を報知する(ステップS60)。具体的には、可動部材80、82、84を特別図柄表示器24の表示領域に入り込ませた後、すぐに原位置(基準位置)に戻す。このとき、遊技者等には可動部材80、82、84が降りてきてすぐに引っ込むように見える。そして、図4のステップS16で記憶したリーチパターン用乱数R Cを読み込み(ステップS62)、リーチパターンを決定する(ステップS64)。リーチパターンの決定は、例えば図6のステップS42(またはステップS52)で決定した停止予定図柄と、図7のステップS62で読み込んだリーチパターン用乱数R Cとに基づいてROM112等に記憶された第1データテーブル等に従って決定する。当該第1データテーブルは、停止予定図柄(あるいはリーチ図柄と中国図柄との間における図柄のずれ)とリーチパターン用乱数R Cとの関係規定する。

【0029】こうしてリーチパターンを決定した後、表示制御基板200に表示指令を送って特別図柄表示器24にリーチ図柄(第1図柄、第2図柄)を特別図柄表示器24に表示する(ステップS66)。第1図柄は例えば左図柄であり、第2図柄は例えば右図柄である。リーチ図柄は特別図柄表示器24のみや他の表示器のみに表示してもよく、その双方に表示してもよい。こうすれば、特別図柄表示器24以外の表示器にもリーチ図柄等が表示されるので、リーチ図柄が何であるかを認識しやすくなる。リーチ図柄を表示する際には、さらにリーチに達したことを遊技者に報知してもよい。当該報知としては、例えば「リーチ」の文字や所定のアニメーションなどを表示し、音声や特定の効果音をスピーカ50から出し、遊技者が触れるハンドル40や遊技者が座る椅子を振動させる等の態様がある。こうすれば、遊技者はリーチに達したことをより確実に認識することができる。

【0030】その後、ステップS64で決定したリーチパターンが特定のリーチパターンか否かによって処理を分ける(ステップS68)。もし、特定のリーチパターンでないときは(NO)、表示制御基板200に表示指令を送ってステップS64で決定したリーチパターンで変動を行い(ステップS74)、図柄変動を停止して最終図柄(第3図柄)を表示する(ステップS72)。第3図柄は例えば中国図柄であり、今回の抽選における特別図柄(左図柄、中国図柄、右図柄)が確定する。一方、ス

ステップS68において特定のリーチパターンであるときは(YES)、連動変動処理を実行する(ステップS78)。当該連動変動処理の具体的な内容について図8を参照しながら説明する。

【0031】図8に示す連動変動処理では、まず図4のステップS16で記憶した作動回数用乱数R Eを読み込んで(ステップS80)、当該作動回数用乱数R Eに基づいてROM112等に記憶された第2データテーブル等に従って連動回数nを決定する(ステップS82)。第2データテーブルは作動回数用乱数R Eと連動回数nとの関係を規定する。なお、連動回数nと大当たりになり易さを表す期待度(信頼度)とに一定の関係を持たせれば(例えば連動回数nが増えると期待度も高くなる等)、遊技者は連動が行われる期間の長さによって期待度を推測できる。続いて画像と複数の可動部とを連動を行するための準備として、可動部材80、82、84を動かして特別図柄表示器24の表示領域内に入り込ませるとともに、特別図柄表示器24にキャラクタ96(図11等参照)を出現させる(ステップS84)。当該表示領域内に入り込ませる可動部材の個数は任意である。

【0032】そして、ステップS82で決定した連動回数nが0になるまで(ステップS90)、連動回数nを1ずつ減らしながら(ステップS96)、キャラクタ96の動きと可動部材80、82、84の動きとを連動させる演出を繰り返して行う(ステップS86)。当該連動の演出によって、遊技者等からはキャラクタ96および可動部材80、82、84のうち一方が他方に対して作用を及ぼすように見える。なお、必要に応じて可動部材80、82、84の動きに連動させるのはキャラクタ96だけではなく、装飾図柄(背景図柄)を含めてもよい(ステップS88)。こうすれば連動の態様が多様化するで、より面白味が増える。連動した演出を繰り返して連動回数nが0に達すると(ステップS90のYES)、可動部材80、82、84を原位置に戻すとともに(ステップS92)、キャラクタ96と可動部材80、82、84を模した図柄とを連動させる演出を行なった後(ステップS94)、連動変動処理を終了する。キャラクタ96と可動部材80、82、84を模した図柄との連動を期待度に応じて異ならせれば、当該連動を見た遊技者は期待度を推測することができる。

【0033】上記連動変動処理を実行すると、キャラクタ96と可動部材80、82、84との連動を見た遊技者は、望ましい特別図柄で停止することを期待しながらキャラクタ96や可動部材80、82、84の動きを見るようになる。また、ステップS82で決定する連動回数nは作動回数用乱数R Eの値によって毎回異なるので、遊技者はどのぐらいの期間だけ連動が続くかを予測できない。よって遊技者は特別図柄表示器24を見る楽しみとともに、キャラクタ96と可動部材80、82、84とが連動する期間の長さによってはスリルと期

待感を持って遊技することができる。なお、必要に応じて連動回数nを所定回数(例えば3回)に固定してもよい。

【0034】連動変動処理を終えると図7に戻り、図柄変動を停止して最終図柄を表示し(ステップS72)、リーチ処理を終了する。こうしてリーチ処理を終えると図6に戻り、確率変動か否かを判別する(ステップS48)。もし確率変動と判別されたときは(YES)、確率変動処理を実行した後(ステップS50)、変動表示処理を終了する。確率変動か否かは、図4のステップS16で記憶した確率変動用乱数R Dが所定値と一致しているか否か等によって行う。確率変動処理の内容については、周知であるので図示および説明を省略する。一方、確率変動でなければ(ステップS48のNO)、そのまま変動表示処理を終了する。なお、確率変動処理が実行されると、今回の大当たり遊技終了後から次の大当たりになるまで、変動後に大当たり図柄で停止して大当たりになる確率が高まり、特別図柄の変動期間が短縮される。また、変動後に大当たり図柄で停止して大当たりになる確率が高まり、普通図柄の変動期間が短縮される。

【0035】変動表示処理を終えると図5に戻り、大当たりか否かを判別する(ステップS28)。外來ノイズ等の影響を受けにくく信頼性が高いパチンコ機10では、上記大当たり判定用乱数R Aに基づいて「大当たり」か否かを判別する。なお、必要に応じて実際に特別図柄表示器24に表示された特別図柄が大当たり図柄と一致するか否かによって大当たりか否かを判別してもよい。もし「大当たり」ならば(YES)、大当たり処理を行い(ステップS30)、図柄変動処理を終了する。大当たり処理は、例えば大入賞口34の蓋74を一定期間(例えば30秒間)だけ開放し、入賞したパチンコ球の数に応じて賞球を払い出す等の大当たり遊技を行う。一方、ステップS28の判別で「はずれ」ならば(NO)、そのまま図柄変動処理を終了する。

【0036】次に、表示制御基板200で行われる画像表示処理について図9を参照しながら説明する。ここで、メイン制御基板100から送られた表示指令は、受信割り込み等によって適時に実行される別個の処理プログラムによって図3に示すRAM204等に設けた受信バッファに記憶されているものと仮定する。図9に示す画像表示処理では、まずCPU210が受信バッファに記憶した表示指令を読み込み(ステップS100)、読み込んだ表示指令に基づいて表示データを取得しRAM204に記憶する(ステップS102)。より具体的には、表示指令と表示データとの関係を規定しROM202等に記憶したデータテーブルを参照して表示データを取得する。この表示データは画像編集を行うためのデータ要素(パラメータ)であり、例えばステータス番号、左図柄番号、左位置座標、中図柄番号、中位置座標、右図柄番号、右位置座標、アニメーション番号、ステータ

スフラダ、アニメーションタイム等を有する。こうして取得した表示データを取得した210は、当該表示データをVDP214に伝達する。

【0037】CPU210から表示データを受けたVDP214は、当該表示データに基づいて文字、図柄、背景等のデータをキャラクタジェネレータ212から抽出し〔ステップS104〕、配色指定及びスプライト処理等の画像編集を行った後〔ステップS106〕、VRAMやパレットRAM上にデータを展開する〔ステップS108〕。そして、展開したデータを画像信号に変換して特別図柄表示器24に出力する〔ステップS110〕。こうして表示データに基づいて編集した図柄等を特別図柄表示器24に表示させることができる。また、画像編集をハードウェアとしてVDP214で行うので、画像を高速に表示することができる。

【0038】次に、上記図4～図9に示すそれぞれの処理を実行して、特別図柄表示器24に表示する画像と、可動部材80、82、84とを連動する例について、図10～図12を参照しながら説明する。図10～図12には画像と可動部材との連動例を示す。この例は「大当たり」になるケースの一例を示すものであって、多く発生する「はずれ」のケースについては図示と説明を省略する。

【0039】まず、図10～図12に示す特別図柄表示器24の表示領域内には、図柄群を変動し、左図柄90、中図柄92、右図柄94を停止して表示可能な三つの変動領域を有する。図柄群の変動を開始すると（図6のステップS44、S52）、図10（A）に示すように三つ変動領域ではほぼ一斉に図柄群を変動させ始める。図柄群の変動を始めてからリーチ（所要のタイミング）に達するまでの間にはリーチ予告として（図7のステップS60）、図10（B）に示す状態に可動部材80、82、84をほぼ一斉に（または個別に）降ろし、すぐに図10（A）に示す状態に可動部材80、82、84を引っ込ませる。よって当該可動部材80、82、84の動きを見た遊技者はリーチになるのを推測することができる。その後リーチになると（図7のステップS66）、図11（A）に示すようにリーチ図柄としての左図柄90と右図柄94（この例ではともに図柄「7」）が表示される。また、可動部材80、82、84が特別図柄表示器24の表示領域内に入り込み、キャラクタ96が特別図柄表示器24に現れる（図8のステップS84）。こうしてキャラクタ96と可動部材80、82、84とが現れるのを見た遊技者は、当該出現が期待度に対応するものであれば、大当たり等の特典を期待する期待感をもって特別図柄表示器24を見るようになる。特別図柄表示器24に現れたキャラクタ96は、可動部材80、82、84のいずれかに近づいて動かしたり捕まえようとする。すなわち、キャラクタ96が可動部材80、82、84を動かそうとする。

【0040】続いて、特別図柄表示器24に出現したキャラクタ96が可動部材80、82、84は連動回数nの範囲内で連動して動く（図8のステップS86）。すなわち、図11（B）に示すようにキャラクタ96と可動部材80、82、84とが同調して動く。図11

（B）の例では、可動部材80は降りた状態のままで、可動部材84は引っ込んだ状態のままであって、キャラクタ96の近傍にある可動部材82だけは上下方向（図示する矢印D4方向）に動いている。つまり、キャラクタ96が図面上方向に動くとき可動部材82も図面上方向に動き、キャラクタ96が図面下方向に動くとき可動部材82も図面下方向に動く。このとき、遊技者等からはキャラクタ96が可動部材80、82、84に対して作用を及ぼしたように見える。見方を変えると可動部材80、82、84が動くときキャラクタ96が動いているようにも見え、この場合においても同様に応用することが可能である。この場合には、キャラクタ96が可動部材80、82、84のいずれかの近傍に移動して上述したような連動を行うとなおよい。こうすれば、キャラクタ96が可動部材80、82、84の全部または一部を、あるいは可動部材80、82、84の全部または一部がキャラクタ96を動かしているように遊技者等からは見える。そのため、遊技者等は興味を持って見るようになる。

【0041】さらに、図12（A）に示すように図柄変動の変動速度を次第に落としてゆくと、遊技者等は図柄群を構成する図柄が移動している様子が視認できるようになる（図では図柄を破線で示す）。この時点ではまだキャラクタ96と可動部材との連動が継続しており、図12（A）の例ではキャラクタ96が可動部材84を捕まえている様子を示す。そして、連動回数nが0になると（図8のステップS90のYES）、図12（A）から図12（B）に変化するように可動部材80、82、84が原位置に引っ込んで見えなくなり（図8のステップS92）、キャラクタ96が捕まえた可動部材84を模した赤色の星図柄98と当該キャラクタ96とが特別図柄表示器24の表示領域内で連動して動く（図8のステップS94）。このように実体物の可動部材が特別図柄表示器24の表示領域内に入り込んで、しかる図柄に変化してゆく過程は斬新であるので、当該過程を見る遊技者等は見ていて面白い。よってキャラクタ96と可動部材80、82、84とを特別図柄表示器24の表示領域内で連動させて迫力のある演出を行うことができるので、遊技者等をさらに飽きさせないようにすることができる。

【0042】上記実施の形態によれば、以下に示す効果を得ることができる。

(1) 請求項1に対応し、メイン制御基板100(動作制御部)が可動部材80、82、84(複数の可動体)を動かすと、可動部材80、82、84の動きに連動して表示制御基板200(画像制御部)が特別図柄表示器24の表示領域内にキャラクター96(画像)を表示する(図8の連動変動処理と図11、図12を参照)。可動部材80、82、84は表示領域内外で動いたり、表示領域内に入り込んだり、表示領域内から出たりする。このとき可動部材80、82、84の動きに連動してキャラクター96が動くように遊技者等からは見える。また、可動部材80、82、84のうちどの可動部材(可動体)が動くのかを遊技者等は知り得ない。よって可動部材80、82、84の動きに合わせてキャラクター96が動くことで迫力のある演出となり、これらを見る遊技者をさらに飽きさせない。

(2) 請求項2に対応し、特別図柄表示器24の表示領域内におけるキャラクター96の動きと可動部材80、82、84の動きとが連動するように、表示制御基板200がキャラクター96を動かし、メイン制御基板100が可動部材80、82、84を動かす(図8の連動変動処理と図11、図12を参照)。すなわち、キャラクター96の動きに合わせて可動部材80、82、84を動かし、あるいは可動部材80、82、84の動きに合わせてキャラクター96を動かす。よってキャラクター96と可動部材80、82、84との連動がより多様に変化して迫力のある演出となり、これらを見る遊技者をさらに飽きさせない。

(3) 請求項3に対応し、特別図柄表示器24の表示領域内に可動部材80、82、84が入り込むと、表示制御基板200がキャラクター96を動かし、メイン制御基板100が可動部材80、82、84を動かす(図8の連動変動処理と図11、図12を参照)。このときキャラクター96および可動部材80、82、84のうち一方が他方に対して作用を及ぼしたと遊技者等からは見える。こうした制御により実際にはあり得ない実体のある可動部材80、82、84から実体のないキャラクター96に作用を及ぼしたり、あるいは逆に実体のないキャラクター96から実体のある可動部材80、82、84に作用を及ぼす様子を演出できる。よってキャラクター96と可動部材80、82、84との連動がより多様に変化して迫力のある演出となり、これらを見る遊技者をさらに飽きさせない。

(4) 請求項4に対応し、特別図柄表示器24の表示領域内における可動部材80、82、84の動きとキャラクター96(図柄)の動きとが連動するように、表示制御基板200がキャラクター96を動かし、メイン制御基板100が可動部材80、82、84を動かす(図8の連動変動処理と図11、図12を参照)。可動部材80、82、84の動きに合わせてキャラクター96を動かし、あるいはキャラクター96の動きに合わせて可動部材8

0、82、84を動かす。よって、キャラクター96の動きと可動部材80、82、84の動きとが連動して動くことで迫力のある演出となり、これらを見る遊技者をさらに飽きさせない。また、結果として特別図柄表示器24に大当たり図柄が表示されると大当たり遊技等の特典が与えられるので、遊技者は当該特典を期待しながら遊技することができる。

【0043】[他の実施の形態] 上述したパチンコ機10(遊技機)において、他の部分の構造、形状、大きさ、材質、配置および動作条件等については、上記実施の形態に限定されるものでない。例えば、上記実施の形態を応用した次の各形態を実施することもできる。

(1) 上記実施の形態では、パチンコ機10に本発明を適用した。この形態に代えて、パチンコ機以外の他の遊技機(例えばスロットマシン、パチスロ機、アレンジボール機、雀球遊技機、テレビゲーム機等)であって画像表示部と複数の可動体とを備えたものについても同様に本発明を適用することができる。当該他の遊技機であっても、可動体の動きに合わせて画像が変化するので、画像表示部を見る遊技者をさらに飽きさせない。

【0044】(2) 上記実施の形態では、上下方向に往復運動が可能であって星を模した可動部材80、82、84を複数の可動体として適用した(図2、図11、図12参照)。この形態に代えて、それぞれ回転運動が可能な複数の可動部材を複数の可動体として適用してもよい。この例について図13を参照しながら説明する。図13に示す複合装置300は図1に示す複合装置14に代えて遊技盤面12上に設けられるものであって、一層の入賞口に相当する天入賞口302や、画像を表示可能な特別図柄表示器312、所定方向に回転可能であって特別図柄表示器312の表示領域内に入り込む動きが可能なハンマーを模した可動部材306、308、310、普通図柄の変動中にゲート32を通過したパチンコ球の個数を表示する保留球ランプ304、特別図柄の変動中に第1種始動口30または下部始動口68に入賞したパチンコ球の個数を表示する保留球ランプ314等を有する。可動部材308は図示しないソレノイドやモータ等の駆動体からトルク伝達部材を経て上下方向(図示する矢印D6方向)に回転するように構成され、中国柄に対応する変動領域内に入り込むことが可能である。可動部材306、310についても同様に構成されており、左図柄、右図柄に対応するそれぞれの変動領域内に入り込むことが可能である。

【0045】この構成において、始めに可動部材306、308、310を二点線線で示す原位置に位置決めする。そして、図10(A)に示すように三つの変動領域で図柄変動を開始した後に当該図柄変動を停止する際において、停止しようとする変動領域に対応する可動部材を振り下ろす。この振り下ろしによって、実際には止められる可動部材が表示画面を叩いたと遊技者等に思

わせるため、対応する変動領域の図柄変動を停止する。こうして特別図柄表示器24の表示領域に表示される特別図柄（左図柄、中国図、右図柄；画像）を変化させることができる。さらには衝撃があったと遊技者等に思わせるために、特別図柄や背景図柄をしばらく揺らし続けるアニメーションを行ったり、衝撃音や振動音等をスピーカ50から出す。こうすれば、より面白い表示を実現することができて臨場感も増す。このように可動部材306、308、310が特別図柄表示器24の表示領域内に入り込んで特別図柄や背景図柄等を変化させることにより迫力のある演出となり、遊技者をさらに飽きさせなくすることができる。

【0046】（3）上記実施の形態では、複合装置14の上部側において上下方向に往復運動が可能な可動部材80、82、84を複数の可動体として適用した（図2、図11、図12参照）。この形態に代えて、複合装置の下部側において上下方向に往復運動が可能な複数の可動部材を複数の可動体として適用してもよい。この例について図14を参照しながら説明する。図14に示す複合装置400は図1に示す複合装置14に代えて遊技盤面12上に設けるものであって、一般の入賞口に相当する天入賞口402や、画像を表示可能な特別図柄表示器406、所定方向に回転可能であって特別図柄表示器406の表示領域内に入り込む動きが可能なワニを模した可動部材408、410、412、普通図柄の変動中にゲート32を通過したパチンコ球の個数を表示する保留球ランプ404、特別図柄の変動中に第1種始動口30または下部始動口68に入賞したパチンコ球の個数を表示する保留球ランプ414等を有する。可動部材410は例えば板材を打ち抜いて装飾を施したもので構成し、複合装置400に備えた出入口418から出入りする。この可動部材410はラック436に固定され、そのラック436と噛み合うビニオン430をモータ424の回転軸に固定する。モータ424は図3に示すモータ86に代わるものであり、メイン制御基板100によって回転を制御する。よって、メイン制御基板100からモータ424の回転を制御すると、上下方向（図示する印D8方向）に対する可動部材410の移動量や移動速度等を制御することができる。可動部材408、412についても同様に構成されている。すなわち、それぞれラック434、438に固定されて出入口416、420から出入りし、モータ422、426回転軸にそれぞれ固定したビニオン428、432を通じてトルクが伝達されて上下方向に往復運動する。なお可動部材408、410、412は、ワニ以外の動物（例えばタヌキやクッネ等）を模して適用した場合も同様である。

【0047】上記可動部材408、410、412はほぼ同一の構成であるので、簡単のために可動部材410の例について運動する動きを説明する。始めに可動部材410を可動部材408、412で示す原位置に位置決

めする。そして、図10（A）に示すように三つの変動領域で図柄変動を開始してから停止した特別図柄（中国図；画像）、あるいは間もなく停止しようとする特別図柄について可動部材410が噛みつくように見せかけるため、対応する可動部材410を上方向に動かす。そして中国図に噛みついたと思える位置まで可動部材410を移動させた後、可動部材410と中国図とをほぼ同じ速度で下方向に移動させる。このとき、遊技者等にはワニを模した可動部材410が中国図を引っ張っているように見える。こうして特別図柄表示器24の表示領域に表示される特別図柄を変化させることができる。可動部材410はワニ（動物）を模しているの、噛みついたと見える中国図が揺れるように変化させるとなお面白い。このように可動部材408、410、412が特別図柄表示器24の表示領域内に入り込んで特別図柄や背景図柄等を変化させることにより迫力のある演出となり、遊技者をさらに飽きさせなくすることができる。

【0048】なお、上記（2）の可動部材306、308、310や、（3）の可動部材408、410、412はいずれも上下方向に作動するように構成したが、左右方向、斜め方向、回転方向などのように任意の方向に作動するように構成したり、作動方向を切り換え可能に構成した場合でも上記効果と同様の効果が得られる。また、特別図柄表示器24に表示する特別図柄やキャラクター96等の画像によって可動部材306、308、310や可動部材408、410、412が一方向的に作用を受けるように運動して動かしてもよい。例えば、特別図柄表示器24に表示した画像でいずれかの可動部材を叩くアニメーションを表示する。このとき遊技者等から見ると可動部材306、308、310や可動部材408、410、412に当たったと認識できるときは、その可動部材306、308、310や可動部材408、410、412を動かす。こうして画像の変化に合わせて可動部材が動く態様が実現されるので、特別図柄表示器24を見る遊技者等をさらに飽きさせない。

【0049】（4）上記実施の形態では、キャラクター96の動きと可動部材80、82、84の動きとを連動させた（図8の連動変動処理と図11、図12を参照）。背景図柄（装飾図柄）の動きと可動部材80、82、84の動きとを連動させてもよい。例えば、表示制御基板200が背景図柄としての風景（例えば海、山、川など）を変化させると、当該変化に伴ってメイン制御基板100が可動部材80、82、84等の可動体を動かすように制御する。こうした連動であっても迫力のある演出となり、遊技者をさらに飽きさせなくすることができる。

【0050】（5）上記実施の形態では、キャラクター96を画像または図柄として適用した（図11、図12参照）。この形態に代えて、特別図柄表示器24で表示する任意の図柄（特別図柄、チャンス図柄、第4図柄、装

顔図柄等)や、文字、記号、符号、キャラクタ96以外の図形、映像などのように特別図柄表示器24に表示可能なものについて画像または図柄として適用してもよい。これらの画像であっても可動部材80、82、84と連動して変化するので、特別図柄表示器24を見る遊技者をさらに飽きさせない。また、画像表示部として特別図柄表示器24を適用したが(図2、図11、図12等を参照)、普通図柄表示器28や他の表示器を適用してもよい。これらの表示器であっても、当該表示器に表示する画像の変化と可動部材の動きとを連動させることができる。したがって、普通図柄表示器28や他の表示器を見る遊技者をさらに飽きさせない。さらに、可動部材80、82、84が入り込む表示領域は特別図柄表示器24のほぼ全部に適用したが(図11、図12等を参照)、特別図柄表示器24の一部の表示領域としてもよく、他の表示器の表示領域としてもよい。さらには、一つの表示領域だけでなく複数の表示領域についても適用することが可能である。この場合には、一方と他方の表示領域に表示するキャラクタ96は可動部材80、82、84の動きとは無関係に表示してもよく、あるいは可動部材80、82、84の動きと連動して表示してもよい。こうすればキャラクタ96と可動部材80、82、84との連動がより多様に変化するので、特別図柄表示器24を見る遊技者をさらに飽きさせない。そして、特別図柄表示器24の表示領域内でキャラクタ96を移動したり、図柄群の変動を停止する態様で画像を変化させたが(図11、図12等を参照)、他の態様で画像を変化させてもよい。他の態様としては、画像の形状、色彩、大きさ等の形態が変わる態様や、停止している画像から図柄群の変動を始める態様などがある。こうした態様であっても画像と複数の可動部材との連動がより多様に変化するのので、特別図柄表示器24を見る遊技者をさらに飽きさせない。

【0051】(6)上記実施の形態では、キャラクタ96と可動部材80、82、84との連動をリーチ後に実現した(図7のステップS70と図8の連動変動処理を参照)。この形態に代えて(あるいは加えて)、リーチ前に行う図柄群の変動や、確率変動、大当たり遊技中におけるアニメーション表示(装飾図柄等)などのように特別図柄表示器24で表示可能な全ての態様について、所要のタイミングに連動する画像と複数の可動部材との連動を行うように構成してもよい。例えばリーチ前に行う図柄群の変動では、リーチになる確率が高まると、画像と複数の可動部材とを連動させる。こうすれば、画像と複数の可動部材との連動がより多様に変化するのので、特別図柄表示器24を見る遊技者をさらに飽きさせない。また、遊技者はリーチや確率変動等になる期待感を持って遊技することができる。

【0052】(7)上記実施の形態では、発光(発色)させて画像を表示する特別図柄表示器24を画像表示部

として適用した。この形態に代えて、表示面に表した画像を表示するドラム表示器等のような機械的表示器を画像表示部として適用することもできる。例えばドラム表示器はまたは複数の回転体を有し、その回転体の表面(すなわち表示面)に複数の画像を適切に配置して表示。こうして回転体に表された画像を遊技者が認識できる部位が表示領域に相当する。そして、モータ等の駆動体によって回転体を正回転、逆回転、正逆回転や回転速度等を回転制御することにより図柄群の変動等を実現する。この構成によれば可動部材の動きに連動させて回転体の回転制御を行うと、表示領域内の画像を変化させることができる。したがって、画像表示部を見る遊技者を飽きさせない。

【0053】(8)上記実施の形態では、リーチ予告として可動部材80、82、84を降ろすすに引っ込ませる動きを連動して行なった(図7のステップS60、図10(A)、図10(B)参照)。リーチ予告に限らず、単図柄の再変動や全図柄の再変動、大当たり、確率変動等について予告(報知)を行う際に可動部材80、82、84を連動させてもよい。例えば、以下に示す形態を実現できる。(8a)単図柄の再変動を予告する場合について図10〜図12に示した例に適用すると、次のようになる。すなわち、変動している左図柄90が間もなく停止しようとする可動部材80が特別図柄表示器24の表示領域内に入り込み、その後左図柄90が停止するとき以後に可動部材80が引っ込む。この動作を右図柄94と可動部材84との関係についても同様に行う。続いて、左図柄90と右図柄94とが所定の組み合わせ(例えば図柄「77」)でリーチになると、中図柄92の変動が次第にゆっくりとなる。このとき、ゆっくり変動する中図柄92が特別図柄表示器24のほぼ中央部を通過する際の動きに合わせて、可動部材82が上下動して特別図柄表示器24の表示領域内に入り込んでは引っ込む。すなわち特別図柄と可動部材との動きを連動させる。そして、左図柄90、中図柄92、右図柄94がいずれ図柄(例えば図柄「767」)で停止したときに、可動部材82が特別図柄表示器24の表示領域内に入り込むと、再変動を開始する。ゆっくり変動する中図柄92に連動して可動部材82を動かして再変動を予告すれば、より迫力のある演出となる。一方、中図柄92の動きを見た遊技者は再変動を予感でき、特典を得る期待感が高まる。また、図14に示すワニを模した可動部材408、410、412等を用いれば、より臨場感が高まる。(8b)また、単図柄の再変動を予告する場合については次のように行なってもよい。すなわち、上記(8a)のケースにおいて左図柄90と右図柄94とが所定の組み合わせでリーチにならなくなった(例えば図柄「75」)、可動部材80と可動部材84の少なくとも一方を特別図柄表示器24の表示領域内に入り込ませる。その後、入り込ませた可動部材を引っ

込ませるとともに、当該可動部材に対応する図柄について再変動を開始する。リーチに達しなくても可動部材が現れて再変動が始まるという運動を行えば、より迫力のある演出となる。また、この態様を見た遊技者は特典を得る期待感が高まる。(8c) 全国柄の再変動を予告する場合について図10～図12に示した例に適用すると、次のようになる。すなわち、図柄番の変動を開始した後、左図柄90、中国柄92、右図柄94が大当たり図柄(例えば図柄「666」)で停止したとき、図10(B)に示す状態に可動部材80、82、84をほぼ一斉に(または個別に)降ろす。その後、図10(A)に示す状態に可動部材80、82、84を引っ込めるとともに、左図柄90、中国柄92、右図柄94を同期させながら変動を行う全国柄変動を開始する。この場合、変動開始のタイミングは左図柄90、中国柄92、右図柄94についてほぼ一斉であってもよく、異ならせてもよい。変動開始のタイミングを異ならせる例としては、最初に左図柄90が変動し始めて1周すると中国柄92を変動し始め、さらに中国柄92が変動し始めて1周すると右図柄94を変動し始める。変動開始のタイミングを切り換えて行えば変動態様が多様化して面白味が増す。

【0054】(9) 上記実施の形態では、大当たりになり易さを表す期待度(信頼度、当たりの確率)とは無関係にキャラクタ96(画像)と可動部材80、82、84(可動体)とを連動させた(図7のステップS70と図8の連動変動処理を参照)。この形態に代えて(あるいは加えて)、期待度に関係させてキャラクタ96と可動部材80、82、84とを連動させてもよい。例えば可動部材80、82、84について、全く出現しないときの期待度を0%とし、いずれか一つが出現するときの期待度を30%とし、いずれか二つが出現するときの期待度を60%とし、全て出現するときの期待度を90%とする。あるいは、可動部材80が出現するときの期待度を10%とし、可動部材82が出現するときの期待度を30%とし、可動部材84が出現するときの期待度を50%とし、実際に出現した可動部材にかかる期待度を演算(例えば四則演算や関数演算等)した値を最終的な期待度としてもよい。特別図柄表示器24の表示領域内に入り込む可動部材を見た遊技者は期待度を推測でき、特典を期待する期待感が高まる。このことは、連動させる他方側のキャラクタ96(すなわち種類や個数等)や他の画像(例えば特別図柄や装飾図柄等)についても同様に適用することができる。また、リーチや全国柄の再変動、全国柄の再変動、大当たり、確率変動等についても予告(報知)を行う際にキャラクタ96と可動部材80、82、84とを連動させる場合についても同様に適用することができる。これらの場合であっても、遊技者は期待度を推測でき、特典を期待する期待感が高まる。

【0055】(10) その他に、可動部材80、82、84(可動体)自身の色彩を変化させる機能や、図柄を表示する機能(表示器)、点灯可能な機能(発光体)等のいずれか一つの機能を備えたと、可動部材80、82、84の作動形態をより多様化することができる。また、期待度に応じて可動部材80、82、84の動き方、色彩、図柄の内容、点灯/消灯の状態等を変化させると、可動部材80、82、84の状態を見た遊技者は期待度をよりの確に推測でき、特典を期待する期待感が高まる。

【0056】

【発明の効果】本発明によれば、画像と複数の可動体とを表示領域内で連動させることで迫力のある演出となり、遊技者はさらに飽きさせなくすることができる。

【図面の簡単な説明】

【図1】第1種パチンコ機の外観を示す正面図である。

【図2】(A)には複合装置の外観を示す拡大図を、(B)には(A)におけるA-A線の断面図をそれぞれ示す。

【図3】メイン制御基板と表示制御基板の概略構成を示すブロック図である。

【図4】第1種始動口処理を示すフローチャートである。

【図5】図柄変動処理を示すフローチャートである。

【図6】変動表示処理を示すフローチャートである。

【図7】リーチ処理を示すフローチャートである。

【図8】連動変動処理を示すフローチャートである。

【図9】画像表示処理を示すフローチャートである。

【図10】画像と複数の可動体との連動例を示す図である。

【図11】画像と複数の可動体との連動例を示す図である。

【図12】画像と複数の可動体との連動例を示す図である。

【図13】他の複合装置の外観を示す拡大図である。

【図14】他の複合装置の外観を示す拡大図である。

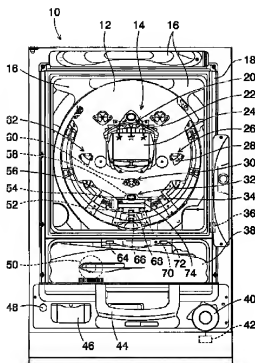
【符号の説明】

- 10 パチンコ機(遊技機)
- 14 複合装置
- 20、22 保留球ランプ
- 24 特別図柄表示器(画像表示部)
- 30 第1種始動口
- 34 大入賞口
- 60、66 始動口センサ
- 68 下部始動口
- 80、82、84 可動部材(複数の可動体)
- 86 モータ(駆動体)
- 96 キャラクタ(画像)
- 98 星図柄(可動体を模した画像)
- 100 メイン制御基板(動作制御部、遊技制御部)

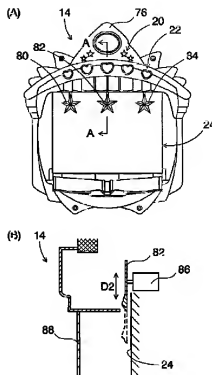
110, 210 CPU
112, 202 ROM
114, 204 RAM

200 表示制御基板 (画像制御部)
212 キャラクタジェネレータ
214 VDP

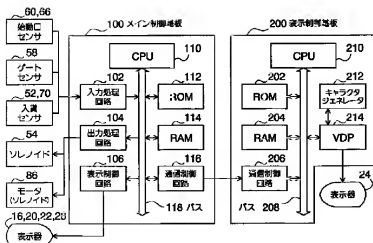
【図1】



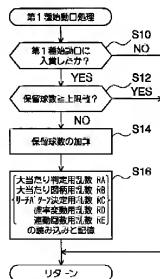
【図2】



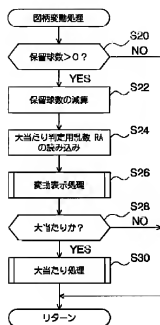
【図3】



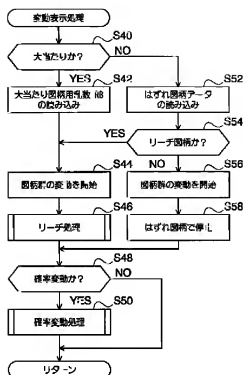
【図4】



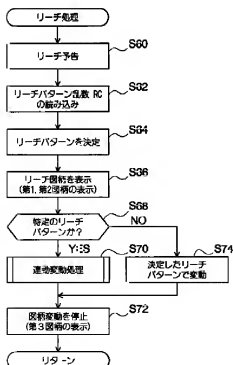
【図5】



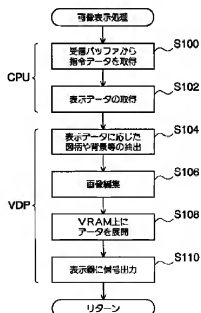
【図6】



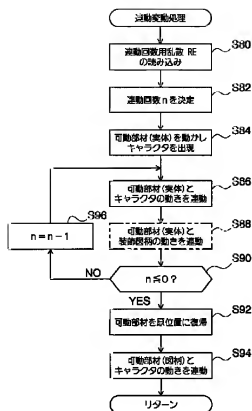
【図7】



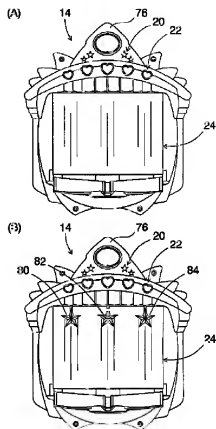
【図9】



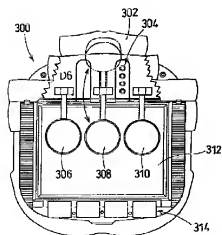
【図8】



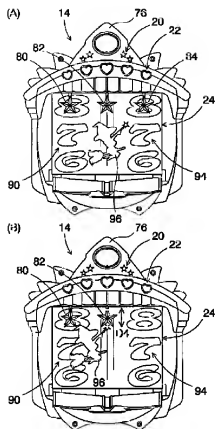
【図10】



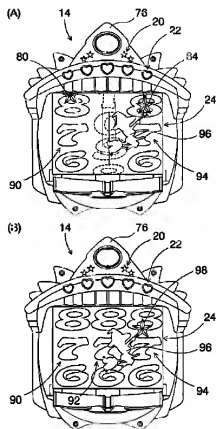
【図13】



【図11】



【図12】



【图14】

